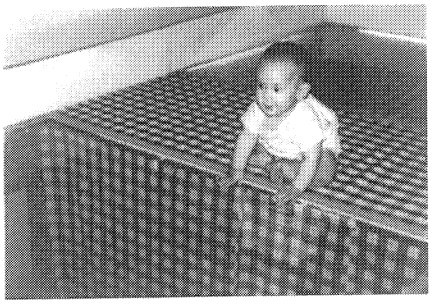
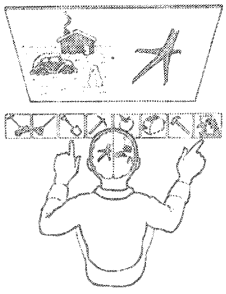
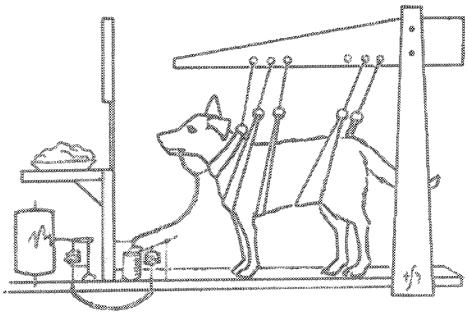
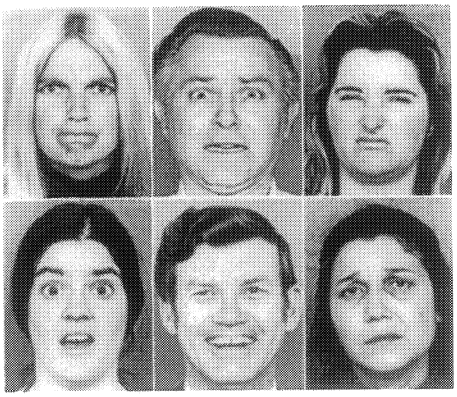
Famous Studies In Psychology

The History of Psychological Research



A Summary of Psychological Studies and Experiments compiled from:

Roger R. Hock's *Forty Studies That Changed Psychology*

Summaries written by Caroline Clement & Aaron Portenga

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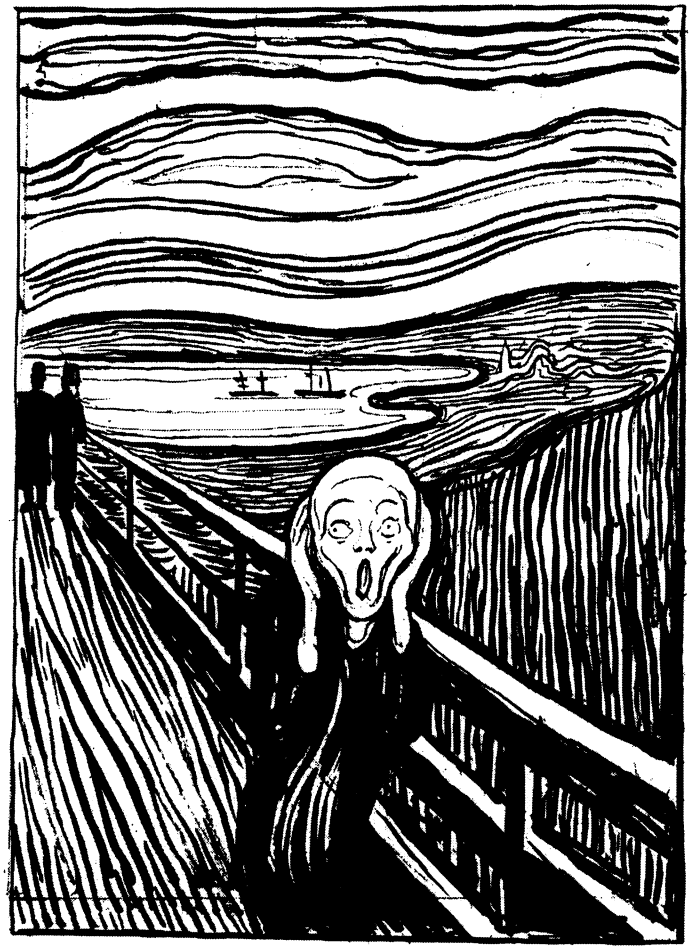

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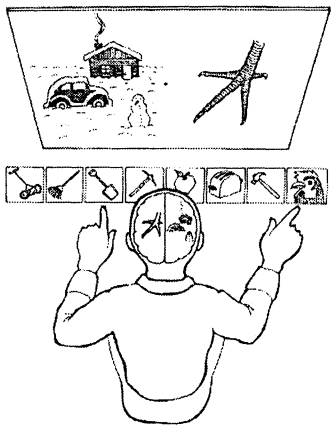
Biology & Human Behavior



Study # 1: One Brain or Two
Study # 2: More Experience = Bigger Brain?
Study # 3: Are You a "Natural"?
Study # 4: Watch Out for the Visual Cliff!

Study # 1

One Brain or Two

Gazzaniga, M.S.
The split brain in man

Introduction:

The two sides of the brain are not the same. The left side controls the ability to use language, while the right side is involved more in spatial relations. A stroke victim who suffers damage to the left side will usually lose their ability to speak (this can return with practice). Many people believe that each hemisphere may be a completely separate mental system. R.W. Sperry conducted many experiments on cats' brains. He would cut the connection between the two halves, and observe the cats' behaviors. The cats' behaviors demonstrated confusion in communication between the two sides of the brain. Michael Gazzaniga decided to follow up on Sperry's research, but Gazzaniga was going to use humans.

The corpus collosum is the structure that connects the two hemispheres of the brain. If the corpus collosum is cut, there is no communication between the left and right side. In some rare cases, severing the corpus collosum will eliminate severe seizures in epileptics. So Gazzaniga decided to use four patients of this surgery to conduct split brain research.

Theoretical Propositions:

1. If the corpus collosum is severed, will the right side of the body be unable to coordinate with the left?
2. Will you be able to speak and understand properly?
3. Can a person function normally after this procedure?
4. How will the senses of vision, hearing and touch be affected?

Method:

Gazzaniga administered three different tests:

1. Visual: a picture or word was transmitted to only one visual area (either right or left). If sent the left, the eye receptors sent the information to the right hemisphere. If sent to the right, the eye receptors sent the information to the left hemisphere.

2. Tactile (touch): The subjects would reach under a table and feel an object. Sometimes, they would conduct the visual and tactile test simultaneously. They would project a picture of a pen into one hemisphere, and the subject would search for the object (among various objects) with either hand.

3. Auditory abilities: the subject was asked to grab an item out of a bag with their left hand. Gazzaniga also wanted to know if the surgery affected verbal responses. The subjects were asked to reach into a bag and touch an object, and then state what they were touching.

Results:

First, theses patients were the same as before the surgery in many ways. Their emotions, intelligence level, personality were unchanged. They were also very happy and relieved to be free of the seizures. However, there were some changes, as demonstrated by the above tests.

1. Both sides of the brain can see, but only one side of the brain can speak. So in order for a patient to communicate what he saw, the object must be sent to the left side of the brain.

2. When objects were placed in the right hand, the message was sent to the left side of the brain, and the subject could state what the object was. But if the object were placed in the left hand the message was sent to the right side of the brain. Since the right side is not used in speaking, and it cannot communicate with the left side, the subject was unable to state what the object was. But, if asked to match the object to a group of objects presented to them, they could easily do that.

3. When shown a picture to the right hemisphere, the subject could not state the name, but could pick the object out with his hands from a group of objects.

4. When asked to put hand in a grab bag and pull out a specific object with their left hands, the subjects had no problems. However, if you placed a familiar object in the subjects left hand and asked them to state what it was, they could not. The right side of the brain knew what the object was, but could not send the message to the speaking side of the brain (left side), so they could not say the object's name.

5. The left side is superior in speech, and right side excels in spatial relations.

Discussion:

There seems to be two different brains in our cranium, each with complex abilities. If we really possess two brains, maybe we have the potential to process twice as much information when the brains are divided.

Significance of Findings:

We now know that the two halves of the brain have specialized skills and functions. The left side is better at speaking, writing, math calculations, reading, and is the primary center for language. The right hemisphere is superior for recognizing faces, solving spatial problems, symbolic reasoning, and artistic activities. This information allows us to better treat victims of stroke and brain damage.

Criticisms:

The main criticism is not of the study itself, but of how the right/left brain specialization has filtered down to popular culture. Rather than focusing on the specialization of each side, we need to integrate the two sides to maximize brain performance. All human activities naturally use both sides of the brain.

Study # 2

More Experience = Bigger Brain?

Rosenzweig, Mark, Bennet, Edward, and Diamond, Marian
Brain changes in response to experience.

Introduction:

We decorate our babies' rooms with many stimulating colors because we believe this will help stimulate our children's academic development. In 1785, an Italian researcher found that animals that were trained (versus not trained) had more complex brains with more folds and fissures. Rosenzweig, Bennett and Diamond decided to do a similar experiment to see how experience affects the brain.

Theoretical Propositions:

Rats were chosen as subjects, because using humans would be unethical. Rats are convenient to use because a rats brain is smooth, rather than folded. It is easier to examine and measure than many other animals' brains. Also, rats are small, inexpensive, and have large litters.

**Rosenzweig believed that animals raised in highly stimulating environments will demonstrate differences in brain growth and chemistry when compared with animals reared in plain or dull circumstances. Twelve sets of three male rats were studied.

Method:

There were a total of 36 rats in the experiment. Twelve were assigned to a lab cage with the rest of the colony. Twelve were assigned to the "enriched" environment cage. The final twelve were assigned to the "impoverished" environment cage. The first group lived in a standard lab cage with adequate room, food and water. The "impoverished" group lived in a smaller cage in a separate room with adequate food and water. The "enriched" group lived in a large cage with lots of objects to play with. New toys were placed in the cage everyday.

The rats lived in these environments anywhere from 4 to 10 weeks. The rats were than humanely sacrificed and the brains were autopsied. The person doing the autopsy was unaware from which conditions the rats came. The brains were dissected and measured and weighed. They also studied cell growth and neurotransmitter activity.

Results:

The brains of the enriched rats were different from the others. Their cerebral cortexes were heavier and thicker. Also there seemed to be more neurotransmitter activity. There were more glial cells in the enriched rats' brains. There were not more brain cells, but the brain cells of the enriched rats were larger. The synapses of the enriched rats' brains were larger than those of the impoverished rats.

Discussion and Criticisms:

It appears that brain anatomy and brain chemistry are changed by experience. However, one criticism was that maybe it was not environmental differences, but maybe there were other factors, such as handling or stress. The enriched rats were handled more than the impoverished rats. So, the experimenters did this again, and in the enriched group, handled half of the rats once a day, and did not handle the others. No brain differences were found.

Another criticism was, can animal research be generalized to human beings? The researchers admit that more research would be necessary before any assumptions could be made responsibly about the effects of experience on the human brain.

This research can give us great information about malnutrition and intelligence. Malnutrition can cause a person to be unresponsive to environment stimulation, and may have limited brain development.

Related Research and Recent Applications:

It has been found that learning is enhanced by enriched environmental experiences and the brains of adult animals raised in impoverished conditions can improve when placed in enriched environments. There is evidence to indicate that experience does indeed alter brain development in humans. Autopsies done on people who died of natural causes show the brain is more complex and heavier in people who develop a greater number of skills and abilities. Also, in the brain of a blind person, the visual cortex is much less developed, convoluted, and thinner than a seeing person's brain.

Recent research contends that impoverished environments produce may result in inflexible behavior patterns and an inability to cope with new situations.

Study # 3

Are You A Natural?

Bouchard, T., Lykken, D., McGue, M., Segal, N., & Tellegan, A. (1990)
Sources of human psychological differences: The Minnesota study of twins reared apart.

Introduction:

Take a moment to answer in your mind the following question: "Who are you?". Just think for a moment about some of your individual characteristics: your "personality traits." Are you high strung or "laid back"? Are you shy or outgoing? Are you adventurous or do you seek our comfort and safety? Why are you who you are? In other words, what factors contributed to "creating" this person you are today?

If you are like most people, you will point to child-rearing practices of your parents and the values, goal, and priorities they instilled in you. You will also look to your grandparents, brothers, sisters and teachers. You may also focus on life-changing events. All of these influences share one characteristic in common: they are all environmental phenomena. Hardly anyone ever replies to the question: "Why are you who you are?" with, "I was born to be who I am; it's all in my genes."

Everyone acknowledges that physical attributes, such as height, hair color, eye color, and body type are genetic. More and more people are realizing that tendencies toward many illnesses such as cancer, heart disease, and high blood pressure have significant genetic components. But almost no one thinks of genes as the main force behind which they are psychologically. We are very "environmentally biased" when we discuss causes for our personal attributes.

What causes this environmental bias? First, behaviorism dominated psychological thought for the first half of the 20th century. The theory of behaviorism states that all human behavior is controlled by environmental factors.

Another reason for these environmental explanations of behavior is that genetic and biological factors do not provide visible evidence of their influence. It's easy for someone to say "I became a writer because I was deeply inspired and encouraged by my seventh grade composition teacher." We rarely say, "I became a writer because my DNA contains a gene that has been expressed in me that predisposes me to write well."

Finally, many people are uncomfortable with the idea that they might be the product of their genes rather than the choices they have made in their lives. Such ideas smack of determinism and a lack of "free will".

Theoretical Propositions:

It's simple really. All you have to do is take two humans who have exactly the same genes, separate them at birth, and raise them in significantly different environments. Then, you can assume that those behavioral and personality characteristics they have in common as adults must be genetic.

Method:

Participants: This 1990 article reports on the results from 56 pairs of monozygotic reared-apart (MZA) twins from the U.S. and seven other countries who agreed to participate in week-long sessions of intensive psychological and physiological tests. These were identical twins that were separated early in life, reared apart for all of most of their lives, and reunited as adults.

Procedure: Each twin completed approximately 50 hours of testing on nearly every human dimension you might imagine. They completed four personality trait scales, three aptitude and occupational interest inventories, and two intelligence tests.

Results:

Table 1 summarizes the similarities for some of the characteristics measured in the monozygotic twins reared apart (MZA) and includes the same data for monozygotic twins reared together (MZT). The degree of similarity is expressed in the table as correlations ro "R" values. The larger the correlation, the greater the similarity. The logic here is that if environment is responsible for individual differences, the MZT twins who shared the same environment as they grew up, should be significantly more similar than the MZA twins. As you can see, this is not what the researchers found.

The last column in Table 1 expresses the differences in similarity by dividing the MZA correlation on each characteristic by the MZT correlation. If both correlations were the same the result would 1.00. You will find that the correlations for characteristics were remarkably similar.

Table 1 Comparison of Correlations (*R*) of Selected Characteristics for Identical Twins Reared Apart (MZA) and Identical Twins Reared Together (MZT)*

CHARACTERISTIC	*R* (MZA)	*R* (MZT)	SIMILARITY *R*(MZA) ÷ *R*(MZT)**
Physiological	—	—	—
Brain wave activity	.80	.81	.987
Blood pressure	.64	.70	.914
Heart rate	.49	.54	.907
Intelligence	—	—	—
WAIS IQ	.69	.88	.784
Raven intelligence test	.78	.76	1.03
Personality	—	—	—
Multidimensional personality questionnaire (MPQ)	.50	.49	1.02
California personality inventory	.48	.49	.979
Psychological interests	—	—	—
Strong Campbell interest inventory	.39	.48	.813
Minnesota occupational interest scale	.40	.49	.816
Social attitudes	—	—	—
Religiosity	.49	.51	.961
Nonreligious social attitudes	.34	.28	1.21

* Adapted from Table 4, p. 226.

** 1.00 would imply that MZA twin pairs were found to be exactly as similar as MZT twin pairs.

Discussion and Implications of Findings:

These findings indicate that genetic factors (or "the genome") appear to account for most of the variation in a remarkable variety of human characteristics. This finding is demonstrated by the data in two important ways. One is that genetically identical humans who were raised in separate and often very different settings, grew into adults who were extraordinarily similar, not only in appearance, but in basic psychology and personality. The second demonstration in this study of the dominance of genes is the fact that there appeared to be so little effect of the environment on identical twins that were raised in the same setting.

This thought of the environment having little effect on many behaviors can cause us to think "why bother?" Why bother working hard to be good parents? Why bother trying to help those that are down and out? Well, Bouchard and Lykken want to be the first to disagree with their own findings. In this article, they offer three of their own implications of their conclusions:

1. Clearly, intelligence is primarily determined by genetic factors (70%). However, what that means, is that intelligence is also determined by the environment (30%). So there is some environmental control over this trait.
2. The basic underlying assumption in Bouchard and Lykken's research is that human characteristics are determined by some combination of genetic and environmental influences. In some situations the genetic factors are greater; in other situations the environmental factors are greater. So, genes are not necessarily destiny and devoted parents can still influence their children in positive ways, even is they are only working on a small percentage of the total variation.
3. People's genetic tendencies actually mold their environments. Do affectionate environments produce affectionate children? Or do naturally affectionate children cause the environment around them to respond more affectionately?

Criticisms and Related Research:

Studies from the University of Minnesota team found that not only is the job you choose largely determined by your genes, but job satisfaction and work ethics is also influenced by genetic factors. Other studies have shown that people's variation on the characteristics of extraversion-introversion (out-going vs. shy), neuroticism (tendency to suffer from anxiety), and conscientiousness (degree to which a person is competent/responsible) is explained more by genetic differences than by environmental factors.

One criticism of this study is that Bouchard and Lykken are not publishing their data as fully and completely as they should, and therefore, their finding cannot be independently evaluated.

These same critics also claim that there are many articles reporting on case studies demonstrating strong environmental influences on twins that Bouchard and Lykken fail to consider.

Recent Applications:

Some fascinating new research is examining very complex human characteristics and behaviors that few would have even guessed to be genetically driven, such as love, divorce, and even death. Researchers did find a genetic link to divorce. If one member of a pair of identical twins was divorced, the chance that the other would also be divorced was found to be 45%. This was significantly higher than the 20% rate of divorce in Minnesota overall.

Finally, even death appears to be genetically influenced. Researchers at the Minnesota twin labs found that identical twins are quite likely to die at the same age (even if reared apart) while fraternal twins tend to die at different ages.

Study # 4

Watch Out For The Visual Cliff!

Gibson, E.J., and Walk, R.D.
The "visual cliff".

Introduction:

Our visual ability to sense and interpret the world around us is an area of interest to experimental psychologists. The central question s whether these visual perceptions are inborn or learned. Turnbull addressed this with his study on Kenge, but he did not use a systematic study of visual perception in a lab. Eleanor Gibson and Richard Walk noticed that infants are prone to falls from higher places, and they do a poorer job of going down stairs. So, they decided to study depth perception in the laboratory.

Theoretical Propositions:

Gibson and Walk believed that depth perception and the avoidance of a drop-off appear automatically as part of our original biological equipment and are not, therefore, products of experience.

Method:

The visual cliff consisted of a table about 4 feet high with a top made from a piece of thick, clear glass. Under half of the table was a solid surface with a red and white checkered pattern. Under the other half is the same pattern, but it is at a lower level than the other checkered part. This gives the illusion that the checkered surface is "dropping off".

The subjects were 36 infants between the ages of 6 months and 14 months. The mothers also participated. The infants were placed on a centerboard in the middle of the cliff, and the mother called for the infant to crawl to her first from the deep side, and then from the shallow side.

Gibson also conducted this test with other animals to use as a standard of comparison.

Remember, the goal of this study was to determine if perception is learned or innate.

Results and Discussion:

Nine children refused to move off the centerboard. The other 27 all crawled over the shallow portion. Only three crawled over the deeper portion. The other children appeared to be fearful of the deep side.

This does not tell us that depth perception is inborn, because all of the infants were at least 6 months old. So we do know depth perception is prevalent at 6 months. So we looked at the results of the tests with the animals.

Baby chicks, at 24 hours, never stepped on the deep side. Baby lambs never stepped on the deep side. However, rats stepped on the deep side. Their visual systems are not very developed.

Gibson and Walker concluded that depth perception is a survival ability. For humans this does not occur until 6 months, but in other species, it occurs almost immediately. However, children's motor skills develop later. So they might perceive the different depth, but might not have the motor skills to adjust.

Criticisms and Subsequent Research:

The biggest criticism is if they really proved depth perception is innate in humans.

What was more important was the "visual cliff" itself. This method of testing infants in a lab setting was the first of its kind. In another study using the cliff, the mother would give a certain facial expression to the child. Sometimes the mother would have a fearful expression, and sometimes she would have a happy expression. When the infants sensed fear, they would not crawl. When they saw happiness, they would crawl.

Recent Applications:

Eppler, Adolph, and Weiner (1996) used a method similar to Gibson's to explore infants' perception of slanted surfaces. They determined that infants at differing developmental levels can perceive differing degrees of slope.

Strickland (1996) used virtual reality to help autistic children safely explore and interact with the world around them. Virtual reality is used to design custom programs that allow each individual child to gain valuable experience without danger of physical injury.

Perception & Consciousness

Study # 5: What You See is What You've Learned
Study # 6: To Sleep, No Doubt to Dream…
Study # 7: Unromancing the Dream…
Study # 8: Acting As If You Are Hypnotized

Study # 5

What You See Is What You've Learned

Turnbull, C.M. (1961)
Some observations regarding the experiences and
Behavior of the BaMbutie Pygmies

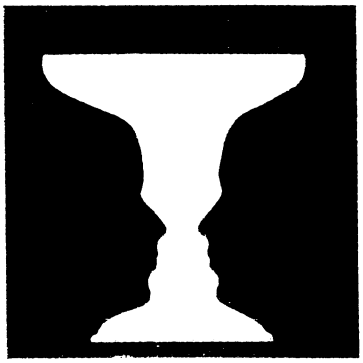
Theoretical Propositions:

Sensation refers to the information you are constantly receiving from your environment through your senses. (light, smells, sound, etc) Perception refers to how we take this jumble of sensations and create meaning. We take the sensations of smell, sight and taste and organize to know that we are eating a pizza.

There are a number of different perceptual tricks that help us make sense of our world. I will discuss three of them:

1) Figure-ground: when looking at a picture, object, we are able to determine the figure as it stands from the ground. We can find a red marble in a bag of blue marbles. It "sticks out" visually. This is why soldiers wear camouflage –so they don't stick out.

   An example of figure ground:



2) Shape constancy: the shape of an object stays the same even though our sensations change them drastically. If you walk around a chair, the image changes with every step you take- yet you perceive the shape of the chair to be unchanged.
3) Size constancy: perceiving a familiar object as being the same size regardless of its distance from you. You know that a school bus two blocks away is not a toy bus, but a full sized bus.

The question is, are these perceptual abilities learned or inborn? Some research shows that figure-ground is, at least in part, innate or present from birth. However, perceptual constancies appear to be learned.

Method:

Turnbull is an anthropologist who studied the life and culture of the BaMbuti Pygmies in the 1950s and 1960s. Turnbull used naturalistic observation as his research method. Turnbull was traveling through the forest with a young Pygmie man by the name of Kenge (about 22 years old). Kenge had always lived in a very thick forest with little visibility, and Turnbull took him to an edge of a hill with a very distant view.

Results:

Kenge had never witnessed the world from a great distance. He did not know if the mountains were hill or clouds. Turnbull then took Kenge for a drive to the base of the mountains, and in a large, treeless plain.

Kenge saw a herd of buffalo feeding in the distance. Kenge thought they were insects! Turnbull told him they were large buffalo, and Kenge thought he was being told a stupid story. So Turnbull drove Kenge toward the buffalo. As they neared the buffalo, Kenge watched them increase steadily in size. Kenge believed this was witchcraft.

Later they witnessed a fishing boat on a lake from a distance. Kenge could not believe it was a boat – it was too small to hold people. Turnbull reminded him of the buffalo – and then Kenge agreed in amazement.

Discussion:

We acquire the perceptual abilities of size constancies. Culture and environment have a huge impact on these abilities. Kenge did not develop these because he had lived in the dense jungle his entire life, and his vision was limited to about 100 feet.

Significance of Findings and Recent Applications:

Turnbull's work re-ignited the debate over nature/nurture and perceptual abilities. Blakemore and Cooper (1970) raised in kittens in darkness, except for exposure to either vertical or horizontal stripes. When the cats were taken out of the dark environment, the kittens exposed to vertical lines responded only to vertical lines and ignored horizontal lines. These particular deficits were permanent.

However, studies do show that some perceptual abilities are present at birth. Newborn infants prefer bright colors over grays and blacks.

Study # 6

To Sleep, No Doubt to Dream...

Aserinsky and Kleitman (1953) Regularly occurring periods of eye mobility and concomitant phenomena during sleep

Dement, William (1960) The effect of dream deprivation.

Introduction:

Aserinsky first did a study on rapid eye movement associated with dreaming. He used 20 adults as his subjects. He let them sleep, then when he noticed rapid eye movement, he woke them and asked if they could remember the content of their dreams. There were a total of 27 awakenings; of these, 20 reported visual dreams. Aserinsky concluded that REM sleep is dreaming sleep.

Therefore, we acknowledge that Aserinsky discovered REM sleep in the early 1950s. Dement wanted to build on these findings, and study the basic function and significance of dreaming.

Theoretical Propositions:

One of the results of Aserinsky's study was that dreaming occurs every night in everyone. So Dement's obvious question was "Would it be possible for human beings to continue to function normally if their dream life were completely or partially suppressed? Should dreaming be considered necessary in a psychological sense or a physiological sense or both?"

Method:

Dement used eight males. They would come to the sleep laboratory at their usual bedtimes. Small electrodes were attached to their scalps and near their eyes to measure brain-wave patterns and eye movements.

For the first few nights, the subjects were able to sleep peacefully, to establish baseline sleeping patterns.

Then over the next several nights, each participant would be awakened every time he began to dream. The subject was required to sit up in bed and become fully awake before he was allowed to go back to sleep. The subjects were asked to not sleep at other times (nap) during the course of this study.

Following the nights of dream deprivation, the subjects entered the "recovery phase" of the study. During these nights the subjects slept undisturbed.

Next, each subject was given several nights off. Then six of them returned to the lab for another series of interrupted nights. But this time, the subjects were not awakened at the beginning of the dream, but at the conclusion of the dream. This was a control condition, to make sure that it was the interruptions of the dreaming, not the interruption of sleep that causes behavioral differences.

Results:

The baseline results showed that the average amount of dreaming by the subjects was 80 minutes (out of 6 hours and 50 minutes of sleeping).

Then we get to the dream interruption stage. On the first night, the experimenter had to wake the subjects up 11 times (on average) to block REM. However, as the study went on, the subjects tried to dream more and more every night. By the final night, the subjects had to be awakened 22 times (on average). Because of dream deprivation, the subjects were attempting to dream more.

When deprived of REM sleep, the average amount of dream time increased to 112 minutes per night. This elevated dream time continued for five consecutive nights.

Dement threw out the results of one subject because he came to the lab under the influence of alcohol one of the nights, and alcohol inhibits dreaming.

Discussion:

Dement concluded that we need to dream. When we are not allowed to dream, we try to make up for it in later nights. This "making up of dreaming" is called "REM Rebound".

The subjects behavior was also monitored. All subjects developed minor symptoms of anxiety, irritability, or difficulty concentrating during the REM interruption phase. Five reported an increase of appetite, and three of these gained 3 to 5 pounds.

Significance of Findings and Subsequent Research:

We all dream, and if we are somehow prevented from dreaming one night, we dream more the next night. One way people mat be deprived of REM sleep is through the use of alcohol or other drugs such as amphetamines and barbiturates. When they stop taking the substance, REM-rebound can be so strong and disturbing they become afraid to sleep and return to the drug to avoid dreaming.

Alcoholics who may have been depriving themselves of REM sleep for years can experience dreams while they wake after they quit using alcohol. This is known as "delirium tremens" (terrible and frightening hallucinations).

Finally, further research suggests that there is a greater syntheses of proteins in the brain during REM sleep than non-REM sleep.

Study # 7

Romancing the Dream

Hobson, J.A., & McCarley, R.W.
The brain as a dream-state generator

Introduction:

For years people have wondered why people dream. The history of research on dreaming has been dominated by the belief that the dreams reveal something about yourself. This view can be traced to Sigmund Freud who believed that dreams are the expression of unconscious wishes for things that we are unable to have when we are awake. It was also believed that these unconscious wishes were so unacceptable to the conscious mind that they were disguised in the dreams images and acts. As a result, Freud thought it was necessary to find the surface meaning of a dream, which he called its manifest content, and look deeper into the dream's hidden meaning or what he called its latent content. This view persisted throughout most of the 20th century.

In the late 1970's, Allan Hobson and Robert McCarley, both psychiatrists and neurophysiologists at Harvard's medical school, published a new theory of dreaming that stated that dreams are nothing more than your brain's attempt to interpret random electrical impulses produced automatically in your brain during REM sleep. They suggested that while you sleep there is a part of your brain, located in the brain stem that is periodically activated and produces impulses. This part of your brain is related to physical movement and the processing of information from you senses when you are awake. When you are asleep, your sensory and motor abilities shut down but this part of your brain does not. It continues to create meaningless bursts of neural static and when some of these impulses reach other areas of the brain that are responsible for higher thinking and reasoning, your brain tries to make senses of these impulses in the form of a dream.

Theoretical Propositions:

Hobson and McCarley challenged Freud's psychoanalytic perspective that stated your brain distorts the true meaning of dreams to protect you from their upsetting true content. They contended that dreams are not disguises of unacceptable urges but the results of the mind making sense of neural activity during sleep. They explained that images we see in dreams are the result of the mind finding stored memories to combine with these neural impulses produced in REM sleep. In other words, REM sleep causes dreaming.

Method:

Hobson and McCarley used two methods of research:

1. Study previous work on dreaming. They cited 37 different studies that backed up their hypothesis that REM sleep causes dreaming.
2. Study research on the sleep and dreaming patterns of animals. Believing that all mammals experience the same stages of sleep they looked at how animals' brains reacted during dreaming sleep. Using cats, they were able to stimulate or inhibit certain parts of the animals' brains and record the effect on dreaming sleep.

Results and Discussion:

1. The part of the brain stem that controls physical movement and incoming information from the senses is at least as active during dreaming sleep as it is when you are awake. However,

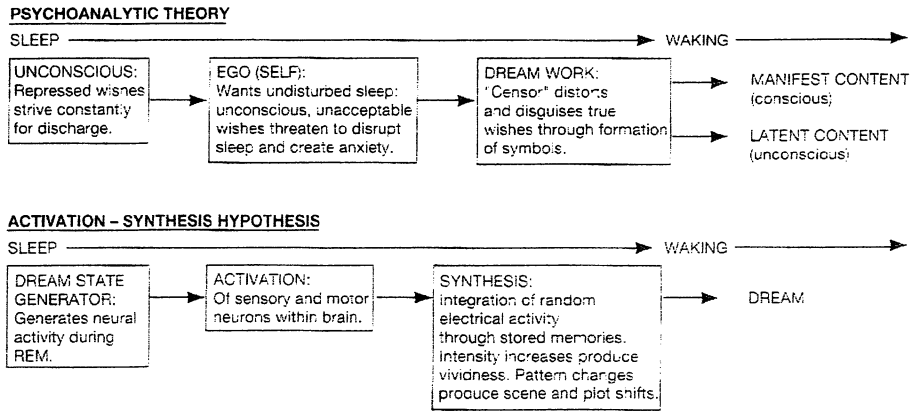
while you are asleep, sensory information from the environment around you and voluntary muscle movements are blocked. This immobilization actually occurs at the spinal cord and not in the brain so the brain can send motor information but the body can't act them out. This is why people will report not being able to run from danger or moving in slow motion in dreams.

2. The main exception to this blocking of muscle movements is in the nerves controlling the eyes. This why rapid eye movement occurs when dreaming.
3. REM sleep occurs at predictable patterns throughout the night, which would not be possible if it were due to a person's unpredictable unconscious wishes.
4. All animals studied cycled through the various stages of sleep with larger animals taking longer than smaller animals. This demonstrated that dreaming sleep is physiological in all animals.
5. Hobson and McCarley claimed to have found the "dream state generator" in the brain. The pontine brain stem, located in the back and near the base of the brain was active during periods of dream (REM) sleep. When they inhibited this area in cats, they would go weeks without going into dream (REM) sleep. When they activated this area during sleep they caused longer periods of REM sleep.

Implications:

Hobson & McCarley created the Activation-Synthesis Model of Dreaming, which follows:

1. The primary motivating force for a dream comes not from our unconsciousness but from a physiological process that occurs nightly when we experience REM sleep.
2. During dreaming, the brain stem is not responding to sensory input or motor output based on the world around you. Instead, it is activating itself internally. Since this area of the brain does not have the ability to create ideas, emotions, stories, fears, or wishes those must come from the electrical activity being sent to the higher functioning forebrain that tries its best to make sense of this information in the form of a dream.
3. Images are called from your memory in an attempt to match the data generated by the brain stem's activation. It is because these neural impulses from the brain stem are so random that your dreams seem so bizarre.
4. The reason we forget our dreams is not repression as Freud stated but the fact that when we are in REM sleep our brain suppresses certain chemicals needed for converting short-term memories into long-term memories.
5. See a comparison of the two theories below:


PSYCHOANALYTIC THEORY
SLEEP
WAKING
UNCONSCIOUS: Repressed wishes strive constantly for discharge.
EGO (SELF): Wants undisturbed sleep: unconscious, unacceptable wishes threaten to disrupt sleep and create anxiety.
DREAM WORK: "Censor" distorts and disguises true wishes through formation of symbols.
MANIFEST CONTENT (conscious)
LATENT CONTENT (unconscious)
ACTIVATION – SYNTHESIS HYPOTHESIS
SLEEP
WAKING
DREAM STATE GENERATOR: Generates neural activity during REM.
ACTIVATION: Of sensory and motor neurons within brain.
SYNTHESIS: Integration of random electrical activity through stored memories. Intensity increases produce vividness. Pattern changes produce scene and plot shifts.
DREAM

Study # 8

Acting as If You Are Hypnotized

Spanos, N.P.
Hypnotic behavior: A cognitive, social, psychological perspective

Introduction:

Many psychologists believe that hypnosis is a separate and unique state of awareness, different from both waking and sleep. Nicholas Spanos (1942-1994), however, led the opposing view that hypnosis is in reality, nothing more than an increased state of motivation to perform certain behaviors and can be fully explained without resorting to trances or altered states. Spanos contended that hypnotized subjects are actually engaging in voluntary behavior designed to produce a desired consequence and does not require an altered state of consciousness.

Theoretical Propositions:

Spanos stated that hypnosis is a ritual that in Western culture has a great deal of meaning. Subjects expect to relinquish control over their own behavior, and as the process of hypnosis occurs, they begin to believe that their voluntary acts are becoming automatic, involuntary events.

Method:

Spanos collected data from 16 studies from over a period of more than ten years to support his conclusions.

Results and Discussion:

Spanos claimed there are two key aspects of hypnosis that lead people to believe they are in an altered state of consciousness.

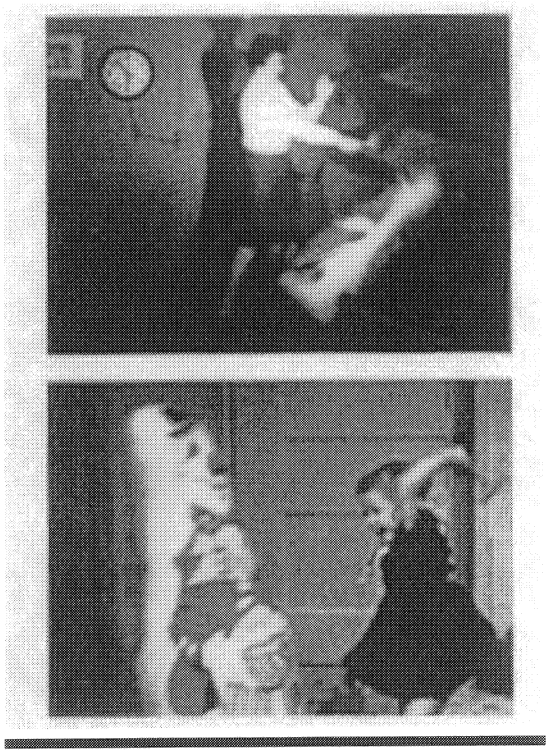
1. The Believe that Behavior is Involuntary –
    a. As subjects are being hypnotized they are usually asked to perform various "tests" to determine if a hypnotic state is being induced. Spanos said these tests are carried out in such a way as to convince the person that something out of the ordinary is occurring. He noted that hypnotic "tests" first asks a person to do something and then ask them to interpret that action as having occurred involuntarily. If a person responds to both requests they are hypnotized.
    b. For example, you are told to hold your arm straight forward and keep it there for a few minutes (asking you to do something). Later, you are told that your arm is getting very light and rising up in the air (asking you to believe this is happening involuntarily). According to Spanos, the fact is your arm is defying gravity shows this must be voluntary but you are choosing to believe it is involuntary. Those people who are told to see things when under hypnosis Spanos explained were just overly absorbed in the information being fed to them from the hypnotist and actively ignoring the fact they were voluntarily engaging in this visualization.
2. Creation of Expectations in Hypnotic Subjects –
    a. Spanos looked at three studies to show how people's expectations influence their hypnotic behavior. In one study a group of subjects were told their arms would become rigid when hypnotized and the other group was not given this info. Later, when hypnotized, only the group who had earlier been told that they should expect this arm rigidness experienced it.

b. In a second study Spanos asked subjects to imagine scenes in which they are performing certain behaviors. Then the same subjects are hypnotized and told to imagine the same thing and rate how vivid it was under hypnosis. The group always reported it was more vivid. However when this was done without hypnosis subjects did not report their images to be more vivid. Spanos said this showed that they expected hypnosis to make their images more vivid.
c. The final study examined the belief that hypnosis can increase pain tolerance by causing the person to ignore the pain while in an altered state. Spanos said that what is actually happening is the person's expectation and motivation to withstand pain has increased. He used ice cold water and timed how long people could withstand it for this test and found that when given the expectations that they would perform better under hypnosis, people were motivated to prove this right and kept their arm in the water longer.

Implications of the Findings:

Whether hypnosis is an altered state of consciousness or not, Spanos did admit that it can be beneficial to people who believe in the power of it. The debate continues today as more brain research is used to see if the brain is acting differently under hypnosis. Many recent articles point to surgeries being done without anesthesia and with hypnosis only to prove that it is more than just expectations as Spanos contended.

Learning & Conditioning



Study # 9: It's Not Just About Salivating Dogs!
Study # 10: Little Emotional Albert
Study # 11: Knock Wood!
Study # 12: See Aggression…Do Aggression!

Study # 9

It's Not Just About Salivating Dogs

Pavlov, Ivan. P (1927)
Conditioned Reflexes

Introduction:

Have you ever had a situation where a smell, sound, or taste has caused you to have a reaction? A certain song makes you feel happy, or the smell of a dentist's office makes you nervous. This process is known as classical conditioning. Pavlov was a physiologist studying digestive processes. But his discoveries dramatically change the history of psychology. As Pavlov worked with dogs and their digestive systems, he noticed that the dogs would begin to salivate before there was food in their mouths, or before they could smell the odor. They just needed to hear the sound of the footsteps of the person delivering their food.

Theoretical Propositions:

Pavlov theorized that the dogs had learned from experience in the lab to expect food following the appearance of certain signals. These "signal stimuli" do not naturally produce salivation, but the dogs came to associate them with the food, thus they salivated.

Pavlov said there were two kinds of response reflexes:

Unconditioned responses (UCR): inborn, automatic, salivating when food enters the mouth

Conditioned responses (CR): acquired through experience, learned; salivating when dog hears footsteps

There are also two different kinds of stimuli:

Unconditioned stimulus (UCS): naturally causes response: food

Conditioned stimulus (CS): learned to cause response: footsteps

Pavlov also theorized that the order in which the conditioned stimulus and unconditioned stimulus were presented contributed to the learning process. The conditioned stimulus must be presented first:

Step1: UCS (food) ⟶ UCR (salivation)

Step 2: CS (footsteps) + UCS (food) ⟶ UCR (salivation)

Step 3: Repeat step 2 several times

Step 4: CS (footsteps) ⟶ CR (salivation)

Method and Results:

Pavlov chose food as his unconditioned stimulus. The food will elicit the unconditioned response of salivation. He chose the sound of a metronome for his conditioned stimulus. A ticking metronome does not naturally elicit salivation in dogs. Over several conditioning trials, the dog was exposed to the sound of the metronome and then immediately presented with food. After repeating several times, the dog started to salivate at the sound of the metronome. The metronome became a conditioned stimulus for the conditioned response of salivation.

Pavlov attempted to teach salivation using other CSs. He was able to produce salivation by pairing the odor of vanilla with food, and he also produced salivation with a visual CS, a rotating object.

One important finding was that the CS must come before the UCS. If the food is presented before the sound of the ticking metronome, the dog ignores the metronome in anticipation of the food, and does not make the association.

Significance of the Findings:

The theory of classical conditioning (Pavlovian conditioning) is universally accepted and has remain virtually unchanged since its conception. It helps us explain a wide range of behaviors, like phobias and other emotional responses.

Classical conditioning focuses on reflex behavior: behaviors that are not voluntarily controlled (salivation, nervousness, etc.).

Related Research and Recent Applications:

Two other studies that relate to this study are the Little Albert study (which you will read after this one), and Joseph Wolpe's use of classical conditioning to teach people to relax in the presence of the source of their phobia. He used the object of fear as the CS and paired it with relaxation (UCS) to produce the conditioned response of relaxation.

Classical conditioning is frequently used in the advertising industry. Most advertisements try to pair their product with something that produces a positive response. Pairing automobiles with beautiful women and certain brands of pop with "fun times" so that people find the product to be more attractive.

Classical conditioning also seems to be effective in the field of medicine. Recent research has shown that the activity of the immune system can be altered using Pavlovian principles. Ader and Cohen (1985) gave mice water flavored with saccharine. They then paired the saccharine water with an injection of a drug that weakened the immune system of the mice. Later, when these conditioned mice drank the saccharine water, they showed signs of a weakening of the immune system. Now we are seeing if the reverse is possible: can we strengthen the immune system in a similar way?

Study # 10

Little Emotional Albert

Watson, J.B., & Rayner, R. (1920)
Conditioned Emotional Responses

Introduction:

Have you ever wondered where your emotional reactions come from? Freud's view of human behavior was based on the idea that we are motivated by unconscious instincts and repressed conflicts from early childhood. Watson theorized that emotional responses exist in us because we have been conditioned to respond emotionally to certain stimuli in the environment. In other words, we learn our emotional reactions. He believed that all human behavior was a product of learning and conditioning.

Theoretical Propositions:

Watson theorized that if a stimulus that automatically produces a certain emotion in you (such as fear) were repeatedly experienced at the same moment as something else, such as a rat, that rat would become associated in your brain with fear. In other words, you will eventually become conditioned to be afraid of the rat.

Method and Results:

The subject, Albert, was recruited for this study at the age of 9 months. He was healthy, both emotionally and physically. He was judged to see if he was afraid of certain stimuli he was presented with, such as a white rat, a rabbit, a monkey, a dog, masks with and without hair, and white cotton wool. Albert was interested in the objects and would reach for them but never showed the slightest fear for any of them. These are referred to as "neutral stimuli".

The next phase of the experimentation involved determining if fear can be produced in Albert by exposing him to a loud noise. Since no learning is necessary for this response to occur it is called "an unconditioned stimulus". The loud noise made Albert cry.

At the age of 11 months, the conditioning began. This stage tested the idea that the emotion of fear can be conditioned in Albert. They presented a white rat just prior to a frightening noise. This process was repeated a total of seven times. Albert began to react with extreme fear to the rat. He began to cry, turned away, rolled over on one side away from the rat, and began to crawl as fast as he could.

The researchers wanted to know if this learned fear could be transferred to other objects (generalization). A week later, Albert was retested and was still afraid of rats.

Now the researchers began to present Albert with other similar items. A white rabbit was presented, and it produced fear. Soon anything Albert saw that was furry or white produced a fearful response. Even a Santa Clause mask produced a response of fear.

Watson wanted to know if this fear was situational, or if this fear would exist in a new environment. So Watson brought Albert to a different room with bright lighting and people present. Albert still exhibited fear to the different items.

Finally, Watson wanted to know if this fear would persist over time. After one month, Albert still feared all of these items. Watson had planned to recondition Albert to not fear these objects, but Albert was adopted and they lost track of him.

Discussion and Significance of Findings:

Watson had two goals in this study: 1) to demonstrate that all human behavior stems from learning and conditioning are 2) to demonstrate that the Freudian connection of psychology, that are behavior stems from unconscious processes, is wrong. This study succeeded in convincing a great portion of the psychological community that emotional behavior could be conditioned. This finding helped launch one of the major schools of though in psychology, behaviorism.

Watson defended his theory by pointing out that his findings could explain human behavior in a rather straightforward and simple way, compared with psychoanalytic theory. Watson demonstrated that one could learn a behavior with a simple stimulus-response relationship, where Freud stressed unconscious wishes and desires.

Questions and Criticisms:

The main criticisms are that it is unethical to teach a child to become fearful. This study was done eighty years ago, prior to our current set of ethical standards. Watson was apprehensive about conducting the study, but then decided that the results would justify the method.

Another criticism was that Albert was allowed to leave the orphanage prior to being reconditioned. It is possible that this fear persisted throughout life.

However, others criticize Watson's results that the fears are long lasting. Albert may lose his fear over time and lack of supportive conditioning. If he starts to associate Santa with presents, he will no longer fear Santa. If he does not see a white rabbit for a long time, he may forget and not fear white rabbits.

Recent Applications:

Many researchers believe that phobias are conditioned in the same way the Albert learned to fear the rat. An item is paired with something that is truly scary, and therefore people learn to irrationally fear the paired item in all circumstances.

Study # 11

Knock Wood!

Skinner, B.F. (1948)
Superstition in the pigeon.

Introduction:

Skinner is referred to as a radical behaviorist because he believed that everything psychological is , essentially, behavioral, including public or external behavior, and private or internal events, such as feelings and thoughts. In any given situation, your behavior is likely to be followed by consequences. Some of these consequences will make the behavior more likely to be repeated in future similar situations. These consequences are called reinforcers. Other consequences that tend to make the behavioral less likely to be repeated in similar situations are called punishers.

Once a behavior has been reinforced, and the reinforcement is then discontinued, the behavior will slowly decrease until it disappears completely (extinction).

A superstition is a belief in something, and we do not usually attribute such "beliefs" to animals. Skinner said in essence that superstitious behavior could not be explained as easily bas any other action by using the principles of operant conditioning.

Theoretical Propositions:

Skinner said that the reason people display superstitious behavior is that they believe or presume that there is a connection between the superstitious behavior and some reinforcing consequence, even though, in reality, there is not. You believe that there is a causal relationship between the behavior and the reward, when no such relationship exists.

Method:

To conduct the experiment, he used a Skinner box (or conditioning chamber), which consists of a cage or box that is empty except for a dish or tray into which food may be dispensed. This allows a researcher to have control over when the animal receives reinforcement, such as pellets of food. The conditioning chambers were designed with disks that could be pecked that would release some food.

One of the chambers was rigged so that it would not drop food when the disk was pecked, but rather dropped food into the tray at intervals of 15 seconds. The pigeon received a reward every 15 seconds, regardless of its behavior.

Subjects in the study were 8 pigeons. These birds were fed less than their normal daily amount for several days, so that when tested they would be hungry and therefore

highly motivated to perform behaviors for food. After several days of conditioning in this way, two independent observers recorded the birds' behavior in the cage.

Results:

In six of the eight cases the resulting responses were clearly defined. One bird was conditioned to turn counterclockwise about the cage, making two or three turns between reinforcements. Another repeatedly thrust its head into one of the upper corners of the cage. A third developed a tossing response as if placing its head beneath an invisible bar and lifting it repeatedly. Two birds developed a pendulum motion of the head and body in which the head was extended forward and swung from right to left with a sharp movement followed by a somewhat slower return. Another bird was conditioned to make incomplete pecking or brushing movements directed toward but not touching the floor. The pigeons behaved as if a certain action would produce the food; that is, they became superstitious.

Time intervals between reinforcements were extended to one minute. The pigeon's movements became more energetic until finally the stepping became so pronounced that it appeared the bird was performing a kind of dance during the minute between reinforcement.

Finally, the new behavior of the birds was put on extinction. Superstitious behaviors gradually decreased. In the case of the "hopping" pigeon with a reinforcement interval that had been increased to a minute, over 10,000 responses were recorded before extinction occurred!

Discussion:

The birds behaved as if there were a causal relationship between their actions and receiving the food. The next step would be to apply these findings to human beings. He described "the bowler who released a ball down the alley but continues to behave as if he were controlling it by twisting and turning his arm and shoulder as another case in point". As Skinner points out in the case of the pigeons in this study, the food was going to appear no matter what the bird did.

It is not completely correct to conclude that there is not relationship between the twisting and turning of the bowler and direction of the ball. In other words, it is a fact that on some occasions, the ball might happen to move in the direction of the bowler's body movements. That movement of the ball, coupled with the consequence of a strike or a spare, is enough to accidentally reinforce the twisting behavior and maintain the superstition.

Finally, when any behavior is reinforced once in awhile, it becomes very difficult to extinguish. This is because the expectation stays high so that the superstitious behavior might work to produce the reinforcing consequences.

Criticisms and Subsequent Research:

Carl Rogers, the founder of humanism, summed up his criticism:

> In this world of inner meanings, humanistic psychology can investigate issues which are meaningless for the behaviorist: purposes, goals, values, choice, perceptions of self, perceptions of others, the personal constructs with which we build our world.

Carl Rogers believed there was more to behavior than just observable actions, such as goals, perceptions, etc.

Behaviorists would argue in turn that all of these human characteristics are open to behavioral analysis. The key to this is a proper interpretation of the behaviors and consequences that constitute them.

Recent Applications:

Brugger, Dowdy, and Graves (1994) contend that a single brain structure, the hippocampus, located in the temporal lobe of the brain, may "be responsible for conditioned superstitions in animals, for common everyday superstitions, and for schizophrenic delusions".

Conclusion:

Some superstitions are such a part of a culture that they produce society wide effects (no labeled 13th floor on most high rise buildings). Most psychologists believe that even though superstitious behaviors, by definition, do not produce the consequences that you think they do, they can serve useful functions. Often such behaviors can produce a feeling of strength and control when a person is facing a difficult situation. This feeling of increased power and control that is sometimes created by superstitious behavior can lead to reduced anxiety, greater confidence and assurance, and improved performance.

Study # 12

See Aggression...Do Aggression!

Bandura, A., Ross, S.A., (1961)
Transmission of aggression through imitation of aggressive models.

Introduction:

One goal of social psychologists has been to define aggression. The question is asked: Why do people engage in acts of aggression? Some believe it is a biological programming that needs to be released. Others believes situational factors, such as repeated frustration, cause aggression. And third, some believe aggression is learned.

This study is one of the most famous and influential demonstrations on how children learn to be aggressive. Bandura is the founder of the "social learning theory", whose followers believe that learning is the primary factor in development of personality and that learning occurs through interactions with other people. For example, as you are growing up, important people such as your parents and teachers reinforce certain behaviors and ignore or punish others. Bandura believed that behavior can be shaped in important ways through simply observing and imitating the behavior of others. This study is also known as "the Bobo doll study".

Theoretical Propositions:

The researcher proposed to expose children to adult models who behaved in either aggressive or non-aggressive ways.

Four predictions:

1. Subjects who observed adult models performing acts of aggression would imitate the adult and engage in similar aggressive behaviors.
2. Children who were exposed to the non-aggressive model would not only be less aggressive than those who observed the aggression, but also significantly less aggressive than a control group of children who were exposed to no model at all.
3. Subjects would imitate the behavior of the same-sex model to greater degree than a model of the opposite sex.
4. Boys should be more pre-disposed than girls toward imitating aggression.

Method:

The subjects were 36 boys and 36 girls, ranging in age from 3 years to almost 6 years. The average age was 4 years and 4 months.

The children were divided, initially, into three groups. One group was the control group, one group was exposed to aggressive models, and the last group was exposed to non-aggressive models. Each of the last two groups was divided into two groups by male and female subjects. Then they were divided again: half of the subjects were exposed to same-sex models, and half to opposite sex models. There were a total of 9 groups: 1 control, and 8 experimental groups.

Each child was exposed individually to the various experimental procedures. First, the experimenter brought the child to the playroom, in the way to encountering a model, who was invited to come and "join in the game". The child was seated in one corner f the room at a table containing highly interesting activities. The child was encouraged to play with the items at his table. Next, the adult model was taken to a table in another corner containing a tinker toy set, a mallet, and an inflated Bobo doll 5 feet tall. The experimenter explained that the toys were for the model to play with and then left the room. For both the aggressive and non-aggressive groups, the model began to assemble the tinker toys. However, in the aggressive condition, after a minute, the model attacked the Bobo doll with violence. After 10 minutes, the experimenter came back, said goodbye to the model and took the child to another game room. In the non-aggressive condition, the model quietly played with the tinker toys for the full 10 minutes.

Now the researchers wanted to frustrate the subjects, to see if this could encourage aggression. So they brought the subjects to another room, with many attractive toys. They let the subjects start to play with toys, and just as they were having fun with the toys, they told them their time was up.

Then they brought the subjects to the final experimental room. This room contained some aggressive toys (Bobo doll, mallet, dart guns, tether ball) and some non-aggressive toys (tea set, crayons, ball, dolls). Each subject played in this room for 20 minutes. The experimenters then measured the subjects violent behavior.

Results:

The children exposed to the violent models tended to imitate the exact violent behaviors they observed. Also, the models' verbally aggressive behaviors were also imitated. These specific acts of physical and verbal aggression were virtually never observed in the subjects in the he non-aggressive group and by the control group subjects.

When the boys observed a male model, their average number of aggressive acts was 104; when they observed a female model, the average number of aggressive acts was 48.4. When the girls observed a female model, their average number of aggressive acts was 57.7; when they observed a male model, the average dropped to 36.3. Girls were more likely to imitate verbal aggression, where boys were more likely to imitate physical aggression.

Discussion:

Bandura, Ross, and Ross claimed that they had demonstrated how specific behaviors, in this case violent ones, could be learned through the process of observation and imitation without any reinforcement provided to either the models or the observers, They also explained that in our culture, as in most, aggression is seen as more typical of males than females.

Subsequent Research:

Bandura, Ross, and Ross conducted a similar follow up study comparing a live violent model, a violent model on film, and violent cartoon model. The live model was the most influential, followed by the model on film, and the least influential was the cartoon.

Bandura also noted that children imitated violence more when they saw it rewarded, but significantly less when the model was punished for aggressive behavior.

The biggest criticism was that the aggression was toward a doll, and not a real person, and the children know this is harmless. However, another study was done, and it was demonstrated that children will aggress toward other humans when frustrated.

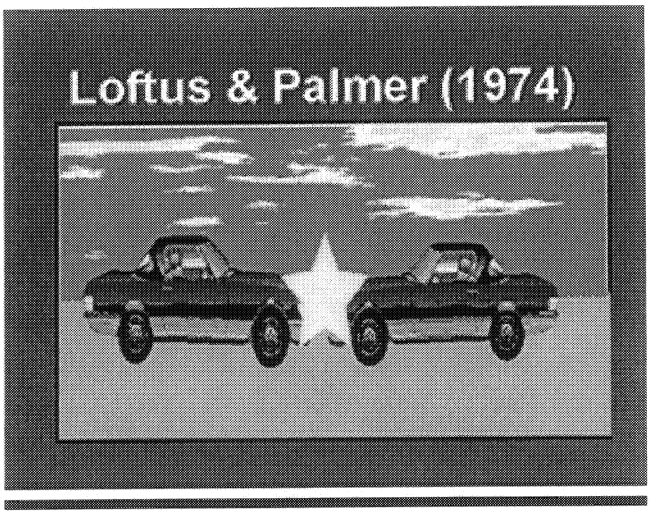
Finally, children who had been exposed to violent programming (guns, knives, fights) were more likely to want to hurt other children than children who watched an exciting sports show.

Conclusions and Recent Applications:

This study made two crucial contributions to psychological thought. First, it demonstrated how children can acquire new behaviors simply by observing adults. Second, this research laid the groundwork for decade of research and dozens of studies on the effects of children viewing violence in person or in the media.

We also believe that social learning theory contributes to career choices made by people. We tend to stereotype men in the science and math fields, and women in nurturing fields, and we portray this on TV. This can encourage young people to make these choices for themselves.

Intelligence, Cognition, & Memory



Study # 13: What You Expect is What You Get
Study # 14: Just *How* Are You Intelligent?
Study # 15: Maps in Your Mind
Study # 16: Thanks for the Memories

Study # 13

What You Expect Is What You Get

Rosenthal, R., and Jacobson, L. (1966)
Teachers' expectancies: Determinates of pupils' IQ gains.

Introduction:

The theory behind the concept of *self-fulfilling prophecy* is that if we expect something to happen in a certain way, our expectation will tend to make it so. Experimenters often have specific expectations or biases that may cause them to send covert and unintentional signals to a subject being studied. These signals may cause the subject to respond in ways that are consistent with the observers' bias, and consequently, confirm their expectations. If this occurs, it renders the experiment invalid. This is known as the *experimenter expectancy effect*.

Robert Rosenthal was concerned about how such biases and expectancies might occur outside the laboratory in places such as the school classroom. If a teacher is aware of child's IQ in the beginning of the year, could this information set up biased expectancies in the teachers' minds and cause them to unintentionally treat "bright" students differently from those seen as less bright?

Theoretical Propositions:

Rosenthal labeled this expectancy effect as "the Pygmalion effect". Rosenthal expected that when an elementary school teacher is provided with information that creates certain expectancies about students' potential, either strong or weak, the teacher might unknowingly behave in ways that subtly encourage or facilitate the performance of the students seen as more likely to succeed, This, in turn, would create the self-fulfilling prophecy of actually causing those students to excel, perhaps at the expense of the students for whom lower expectations exist.

Method:

With the cooperation of the Oak School administration, all the students in grades 1 through 6 were given an IQ test. The teachers were told that the test was a predictor of academic "blooming" of "spurting". Teachers believed that students who scored high on the test were ready to enter a period of increased learning abilities within the next year. This predictive ability of the test was not true.

At Oak School, there were three classes at each of the grade levels. Each of the 18 teachers (16 women, 2 men) were given a list of names of students in their classes who had scored in the top 20% on the test and were identified as potential academic bloomers

during the academic year. These were not real statistics, but rather, these children's names had been randomly drawn, and the teachers were deceived into thinking they were the top 20%.

At the end of the school year, all of the children took the original IQ test so the degree of change in test scores could be measured. Rosenthal would then compare the results of the children falsely labeled as the top 20% (experimental group) to the results of the rest of the children (control group).

Results:

For the entire school, the children for whom the teachers had expected greater intellectual growth averaged significantly greater improvement than did the control children. However, the differences varied by grade level. There were huge differences in grades 1 and 2, and minimal differences in the other grades.

Two major findings emerged from his study. First, the expectancy effect appears to function in real world situations. Second, the effect was very strong in early grades, but almost non-existent for the older children.

Discussion:

When teachers expected that certain children would show greater intellectual development, those children did show greater intellectual development. Rosenthal and Jacobsen offer four possibilities why the self-fulfilling prophecy was not demonstrated in the older grades.

1. Younger children are thought of as being more "malleable" or "changeable".

2. Younger children do not have established reputations yet, so the only opinion the teachers have of the children were the test scores.

3. Younger children may be more easily influenced by and more susceptible to the subtle and unintentional processes that teacher use to communicate performance expectations to them: smiles, scowls, touches, etc.

4. Teachers of lower level grades may communicate with students differently than teachers of upper level grades.

Significance of Findings and Subsequent Research:

Chaiken, Sigler, and Derlega (1974) did a similar experiment, but they videotaped teacher/student interactions. Examination of the videos indicated that teachers favored the "brighter" students in many subtle ways (smiles, more favorable reactions to comments). These researchers add that students for whom these high expectations exist are more likely

to enjoy school, receive more constructive comments from teachers on their mistakes, and work harder to improve.

These studies have raised criticisms of standardized IQ tests. Since these tests were designed by white, upper middle-class males, they are biased against many ethnic groups. If the teachers of these students receive the students' IQ scores prior to the school, teachers may unknowingly convey lower expectations for certain groups of people. As a result, some states have instituted a moratorium on IQ testing and the use of IQ scores in the classroom.

Recent Applications:

One study was conducted with counselors (psychologists, social workers) who work with abused children (Deroma, Hansen, Tishelman, Damico, 1997). The study found that when these professionals received information that a child had been a victim of abuse, they tended to draw conclusions about the child's current and future adjustment based on t he abuse information alone. In other words, knowing a child had been in an abusive situation, created an expectancy on the part of the counselor about such children as a group that may or may not have been true of each individual child.

Another article discovered a racial bias in people's reaction to rap music lyrics (Fried, 1996). Passages of violent lyrics were presented to subjects as a rap song by a black artist, or as a folk or country song performed by a white singer. When people thought they were rap lyrics, they supported government regulation on music lyrics. When people thought it was a country song, the subjects were less critical of the lyrics.

Study # 14

Just *How* Are You Intelligent?

Gardner, H.
Frames of mind: The theory of multiple intelligences

Introduction:

Most intelligence tests produce a single score (IQ) that implies intelligence is one's overall general mental ability. Over time however, people have begun to take notice that each person seems to possess certain abilities or intelligences that may differ from others. This has lead to the multiple intelligences theory. The most prominent proponent for this theory is Howard Gardner.

Theoretical Propositions:

After years of studying the brain, Gardner noticed that the brain was specialized in its functioning. He proposed that different parts of the human brain are responsible for different aspects of intelligence. He called these varying abilities in people the multiple intelligences.

Method:

Gardner formulated his hypothesis using studies on a wide variety of topics and from these developed a set of eight "signs" that define an intelligence. They are listed below:

1. Gardner contended that if a specific mental ability could be destroyed through brain damage, or if it remains intact when other abilities have been destroyed, this provides evidence that we have separate intelligences.
2. The existence of savants, prodigies, and other exceptional individuals show that these "strokes of genius" can occur in various areas of intelligence.
3. Each intelligence has a core operation that is unique to it. (See chart)
4. Intelligences form through a developmental path that starts simple and progresses step by step to higher levels.
5. Skills need to show evidence that they have evolved over time in the human species.
6. Intelligence must be studied using psychological experiments.
7. Intelligence must be able to be measured using existing standardized tests.
8. Intelligence must be represented in some kind of symbol (language, numbers, music).

INTELLIGENCE	CORE OPERATIONS	FAMOUS EXAMPLES
Linguistic	Syntax (word phrasing), phonology (the sounds speech), semantics (the meaning of words), pragmatics (word usage)	Shakespeare, J.K. Rowling, Dr. Seuss. Woody Allen
Musical	Pitch (frequency of sounds), rhythm, timbre (quality of sounds)	Mozart, Lauryn Hill, Andrea Boccelli, Paul McCartney
Logical-mathematical	Numbers, quantities, categorization, causal relations	Albert Einstein, Carl Sagan, Marie Curie, B.F. Skinner
Spatial	Accurate visualization, mental rotation and transformation of images	Picasso, Frank Lloyd Wright, Leonardo DaVinci, van Gogh
Bodily-kinesthetic	Control of one's own body, control in handling objects	Charlie Chaplin, LeBron James, Serena and Venus Williams
Interpersonal	Awareness of others' feelings, emotions, goals, motivations	Ghandi, Abraham Maslow, Oprah Winfrey
Intrapersonal	Awareness of one's own feelings, emotions, goals, motivations	Plato, Hermann Rorschach, Helen Keiler, Bill Gates
Naturalist	Recognition and classification of objects in the environment; sensitivity to the natural world	Charles Darwin, Jane Goodall, Rachel Carson

Results:

Gardner felt that there were eight multiple intelligences that met the above criteria. The are describe below:

1. Linguistic Intelligence – Able to use words in ways that are more skillful, useful, and creative than the average person.
2. Musical Intelligence – Gifted in the abilities of sound, pitch, timbre, and rhythm. Earliest of all the intelligences to emerge.
3. Logical-Mathematical Intelligence – Enable you to think about, analyze, and compute various relationships among abstract objects, concepts, and ideas.
4. Spatial Intelligence – Skilled in creating, visualizing, and manipulating mental images.
5. Body Kinesthetic Intelligence – Physical intelligence in which you are aware of your own body and bodily movements and are skilled in using and controlling you body to achieve various goals or effects
6. Intrapersonal Intelligence – Ability to be aware of and understand who you are, your emotions, your motivations and the sources of your actions.
7. Interpersonal Intelligence – Focused on the feelings, motivations, desires and behaviors of other people.
8. Naturalist Intelligence – Ability to understand and interact with natural environment.

Criticisms & Conclusion:

A major criticism is that Gardner's eight intelligences constitute merely describe different "thinking styles," all of which may be seen as existing within one unified intelligence. Another is that Gardner's theory is so general and encompasses so many areas that can be shaped to fit almost anything hurting its validity in the scientific community. Finally, researchers argue that not enough rigorous research has been conducted to show that this can be applied to real world settings. Despite these criticisms, Gardner's theory still retains its popularity and is widely used in education, parenting and by society in general.

Study # 15

Maps in Your Mind

Tolman, E.C. (1948)
Cognitive maps in rats and men.

Introduction:

Prior to this study, psychology was consumed with strict stimulus-response learning theories that dismissed "unobservable" internal mental activity. Tolman, at the University of California at Berkley, was doing experiments demonstrating that complex internal cognitive activity occurred even in rats, and that these mental processes could be studied without the necessity of observing them directly. Due to the significance of his work, Tolman is considered to be the founder of a school of thought about learning that is today called cognitive-behaviorism.

Imagine for a moment that you want to make your way from where you are now to your house. In just seconds you gather the image of where this place is located. Now thing of the route it should take you to get there. You know you have to take certain streets or highways and make certain turns to get to your home. This picture in your mind is a mental representation. Tolman called these representations cognitive maps, It isn't just humans that think of their world in ways like the cognitive maps, animals also do.

Theoretical Propositions.

In the 1930s and 1940s, Tolman got together with some other researchers and proposed two main modification to the prevailing view. One, the true nature and complexity of learning could not be fully understood without an examination of the internal mental processes that accompany the observable stimuli and responses. Second, though internal cognitive processes could not be directly observed, they could be objectively and scientifically inferred from observable behavior.

Method and Results:

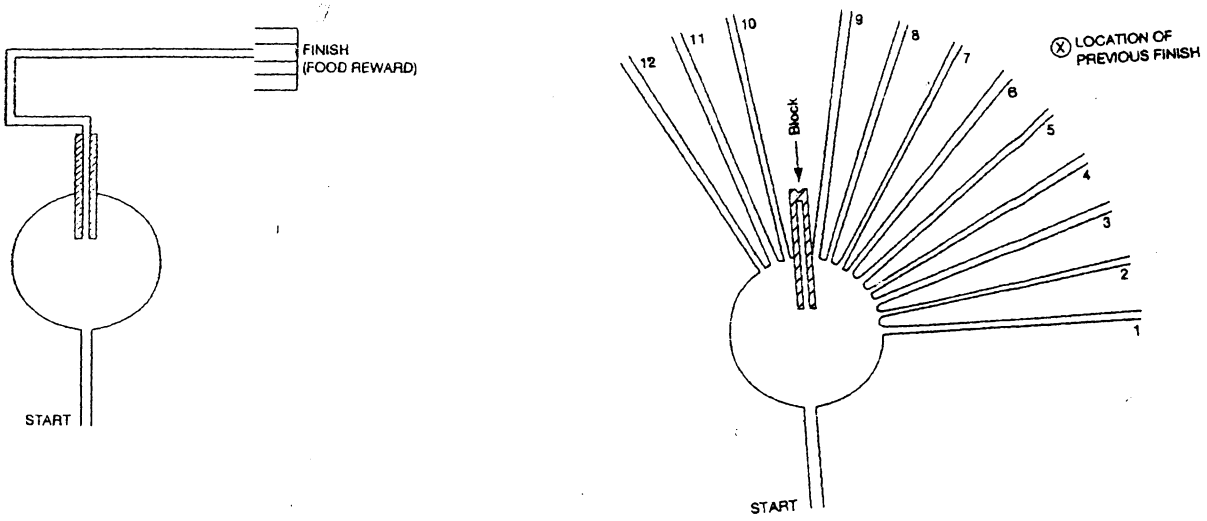
Tolman presented two main studies to support his theory. One was called the "latent learning" experiment. Rats were divided up into three groups. Group C was the control group, which ran through the maze each day with a food reward at the end every time. Group N was the no reward group. They ran through the maze every day and at the end there was not food. Group D was the delay group. There was no food presented to them for the first 10 days, but on the 11th day, food was presented.

The control rats learned the maze to near-perfection in about two weeks. However, when the rats in group D discovered a reason to run the maze (food), they

learned it to near-perfection in only about three days (day 11 to day 13). The only possible explanation for these findings was that during those 10 days when the rats were wandering around in the maze, they were learning much more about the maze than they were showing. The rats were able to create a cognitive map in their mind and demonstrate this learning when they had an incentive (latent learning).

The second study was called the "spatial orientation" experiment. Tolman's spatial orientation technique was designed to show that rats trained in a maze actually know the location in space of the food reward relative to their starting point, even if the elements of the maze are radically changed or even removed.

First, rats learned to run the simple maze shown below. This was a relatively simple maze and no problem for the rats who learned it to near-perfection in 12 trials. Then the maze was changed to a sunburst pattern, as shown below. Now when the trained rats tried to run their usual route, they found it blocked and had or return to the round area. Their they had a choice of 12 possible alternate paths to try to get to where the food had been in the previous maze. Path 6 was chosen by significantly more rats than any other possible route. The rats had, it would seem, had not acquired a simple strip-map, but rather a wider, comprehensive map to the effect that food was located in such and such a direction in the room.



Discussion:

When Tolman applied his findings to humans, he theorized that comprehensive maps of our social environment are advantageous to humans, while narrow, strip-like maps can lead to negative human conditions, such as mental illness or prejudices. His reasoning for this was because when rats were over motivated or over frustrated, they developed narrow paths and were less likely to have the comprehensive cognitive mapping skills.

Subsequent Research and Recent Applications:

A large amount of research has accumulated in support of Tolman's theories of cognitive learning. Today, one of the most active and influential subfields is cognitive psychology. This branch observes cognitive processes. Only a few decades ago, the concept of the "mind" was not a subject of scientific investigation.

Cognitive psychology influenced other areas of psychology such as environmental psychology. This type of psychology deals with how one experiences and thinks about life's various surroundings. For example, how you think about the school you attend and the city you live in.

Tolman's study theory of cognitive mapping has been cited consistently and frequently throughout the 50 years since its publication in a side array of diverse studies. Studies show that the use of virtual reality can help firefighters build cognitive maps a to rescue a "life-size" baby-doll significantly faster.

Study # 16

Thanks for the Memories

Loftus, Elizabeth(1975)
Leading questions and the eyewitness report.

Introduction:

Memory is thought of as a process of re-creating an event. We commonly make assumptions concerning the reliability of human memory. Loftus found that when an event is recalled it is not accurately re-created. Instead, what is recalled is a memory that is a reconstruction of the actual event. Loftus' research has demonstrated that reconstructive memory is a result of your recall of an experience. She maintains that your memories are not stable, as we commonly believe, but that they are malleable and changeable over time.

Loftus' research in the area of memory has been connected to legal eyewitness testimony. She found that very subtle influences, such as how a question is worded, can alter a person's memory for a witnessed event. In four related studies, she demonstrated that the wording of questions asked of eyewitnesses could alter their memories of events when they were asked other questions about the events at a later time.

Theoretical Propositions:

Loftus defines a pre-supposition as a condition that must be true in order for the question to make sense. Loftus hypothesized that if eyewitnesses are asked questions that contain a false pre-supposition about the witnessed event, the false information may appear subsequently in additional reports by the witness.

Method and Results:

Experiment 1: 150 students in small groups saw a film of a five-car chain reaction accident that occurs when a drive runs through stop sign into oncoming traffic. After the film, the subjects were given a questionnaire containing 10 questions. For half of the subjects, the first question was: "How fast was Car A gong when it ran the stop sign?" For the other half of the subjects, the question read: "How fast was Car A going when it turned right?" The last question was the same for both groups: "Did you see a stop sign for Car A?"

In the groups that has been asked about the stop sign, 53% said they saw a stop sign for Car A, while only 35% in the "turned right" group claimed to have seen the stop sign.

Experiment 2: Forty subjects were shown a three minute clip from the film Diary of a Student Revolution. The clip showed a class being disrupted by 8 demonstrators. After the viewing, the subjects were given a questionnaire containing 20 questions. For half of the subjects, one of the questions asked: "Was the leader of the 4 demonstrators who entered the classroom a male?" For the other half, the question asked: "Was the leader of the 12 demonstrators who entered the classroom a male?" The rest of the questions were identical.

One week later, the subjects returned to answer 20 new questions. One of the questions was: "How many demonstrators did you see entering the classroom?"

The group that received the presupposition of 12 demonstrators reported an average of 8.85 demonstrators. The group that received the presupposition of 4 demonstrators averaged 6.40 demonstrators. This experiment showed that the wording of one question altered the way subjects remembered the basic characteristics of a witnessed event.

Experiment 3: This experiment was designed to see if false presuppositions inherent questions could cause witnesses to reconstruct their memory of an event to include objects that were not there. One hundred fifty subjects watched a short video of an accident involving a white sports car and then answered 10 questions about the video. A question to one half of the subjects was "How fast was the white sports car going when it passed the barn on the country road?" The other half of the subjects were asked "How fast was the white sports car going while traveling on the country road?" The subjects returned a week later and answered 10 new questions. One of the questions was "Did you see a barn?"

The group that had received the presupposition of the barn answered yes to the barn question on average of 17.3%, where the "non-barn" group's average was 2.7%.

Experiment 4: Three groups of 50 subjects viewed a three minute film shot from the inside of a car that ends with the car colliding with a baby carriage pushed by a man. the three groups then received booklets containing questions about the film. Each of the three booklets were different.

Group D: The booklet contained 40 filler questions, five key questions; one of the key questions was "Did you see a barn in the film?"

Group F: The booklet had 40 filler questions and five key questions. One of the key questions was "Did you see a station wagon parked in front of the barn?"

Group C: The booklet only contained filler questions.

One week later the subjects returned to answer 20 new questions. Five of the questions were the same as the ones from the previous week. Remember, there was no barn in the film. One week later, 29.2% of group F, 15.6% of group D, and 8.4% of

group C said they saw a barn. So groups that are given a false pre-supposition recall events more incorrectly than the other groups.

Discussion:

Loftus argued that an accurate theory of memory and recall must include a process of reconstruction that occurs when new information is integrated into the original memory of an event. False presuppositions in questions provide subtle forms of new information that is unintentionally integrated into the original memory of the event.

In eyewitness testimonies, Loftus points out that witnesses are frequently asked questions more than once. During these various sessions of questions, it is not unlikely that false presuppositions will be made, probably unintentionally. Loftus contends that what is being remembered by the witness is a "regenerated image based on the altered memorial representation".

Conclusions:

Loftus research in this area continues, and her findings over the years have held up quite well to challenges. However, there are criticisms of her work. Several researcher have argued that the integration of new information may lead a witness to incorrect answers, but that the original correct memory is not lost and may be accessed under the right conditions (Bekerian & Bowers, 1983)

Loftus is one of the most sought after expert witnesses to demonstrate to juries the care they must use when evaluating the testimony of eyewitnesses. Loftus played a key role as an expert in the trial of the police officers accused of beating Rodney King.

Recent Applications:

Loftus is currently one of the leading experts in the heated controversy over repressed childhood memories. Loftus addresses such questions as: How common is it of memories of child abuse to be repressed? How are jurors and judges likely to react to these repressed memory claims? When the memories surface, what are they like? How authentic are the memories? In general, Loftus criticizes the power of repressed memories.

Loftus is also criticized about her rejection of repressed memories. Psychodynamic therapists (Freudian) believe very strongly in the power of repressed memories. Also, many therapists and victims have a very personal stake in the belief that one's memories can be repressed for years and later recovered.

Human Development

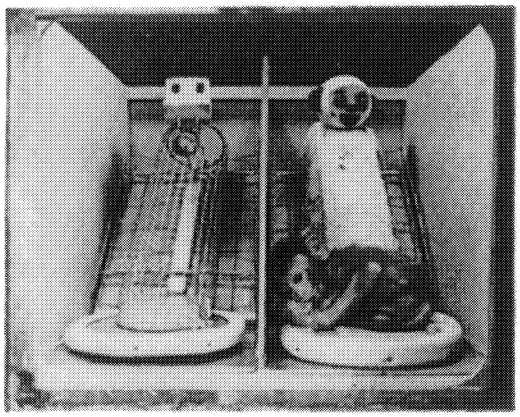


Figure 4. Wire and cloth mother surrogates.

Study # 17: Discovering Love
Study # 18: Out of Sight, But Not Out of Mind
Study # 19: How Moral Are You?
Study # 20: In Control & Glad of It!

Study # 17

Discovering Love

Harlow, H.F.
The nature of love.

Introduction:

Most psychologists agree that your experiences as an infant with closeness, touching and attachment to your mother have an important influence on your abilities to love and be close to others later in life. Harlow discovered that love and affection may be primary needs that are just as strong as or even stronger than those of hunger or thirst. Because doing certain experiments with humans is unethical, Harlow used rhesus monkeys in his study. Biologically, rhesus monkeys are very similar to humans. Harlow also believed that the basic responses of the rhesus monkeys relating to bonding and affection in infancy are the same for the two species.

Theoretical Propositions:

Harlow theorized that there must be some basic need in these infant monkeys for close contact with something soft and comforting in addition to primary biological needs such as hunger and thirst.

Method:

Harlow created two different surrogate "mothers" for the monkeys. One had a smooth wooden body covered in sponge rubber and terry cloth. It had a "breast" in the chest area that delivered milk and contained a light bulb for warmth. The other mother was the exact same, except instead of having a warm body, it was made of wire mesh so the monkeys could cling to it. Both of the surrogates mothers were placed in a monkey's cage, so the monkeys could choose which mother they wanted. Eight infant monkeys were randomly assigned to two groups. For one group, the cloth monkey provided the milk, and for the other group the wire monkey provided the milk. The amount of time that the monkeys spent with each mother was then recorded.

After his preliminary studies, Harlow wanted to explore the effects of attachment in greater detail. In one scenario, he scared the monkeys. In an "open field test", the monkeys were put into a more open space, sometimes with both mothers, sometimes with one mother, and sometimes with no mother. Finally, Harlow wanted to know if the bonding was long lasting. At six months of age, he would separate the monkeys from the mothers, and then re-unite them in open field situations.

Results:

Regardless if the cloth mother supplied the milk or not, the monkeys overwhelmingly preferred to spend time with the cloth mothers. Infant monkeys that were raised with only a wire mother did not digest milk well and had frequent bouts of diarrhea. This suggests that the lack of the soft mother was psychologically stressful to the infants.

When frightened, the monkeys would cling to the cloth mother for comfort.

In the open field test, initially the monkeys would cling to the cloth mother, and then over time would slowly explore the new environment, but would frequently return to the mother for security. This is similar to a human infant.

After being separated from the mothers (sometimes 30 days), when re-united the monkeys rushed to the cloth mother, climbed on it, clutched it tightly, an rubbed their heads and faces on the body.

Discussion:

We now know the overwhelming importance of contact comfort in the development of attachment between infant monkeys and their mothers. This factor in bonding appears to be considerably more important than the mother's ability to provide life-sustaining milk to the infant.

Harlow believe that his results could be applied to humans. With the increasing economic demands, this was a positive finding for the two income family. Because contact comfort seems to be the key in healthy bonding, the father can now play a greater role in bonding while the mother is working.

Criticisms and Significance of Findings:

The first criticism is of Harlow's application to humans. Can these results really be generalized to humans? To a certain extent, yes. But we know that bonding in humans occurs much more slowly. It usually takes six months to over a year to form healthy attachments.

The second criticism is about the ethics of the experiment. Was it ethical for him to treat the monkeys in this manner? Many believe the way that the monkey's were treated was unethical, where others believe it was justified because it tells us so much about the effects of neglect and child abuse.

Because of Harlow's study, we now know how children should be treated in institutionalized settings. They need to be touched and held by staff members, nurses, and volunteers as much as possible. Also, now fathers can feel more adequate in the care-giving role. His study also provides hope for adoptive parents in their bonding processes.

Finally, Harlow wanted to apply his study to child abuse. He created a surrogate monkey that could reject the infant (blunt spikes would pop out, so they would be

"unhuggable"). The monkey would move away until the rejection ended, and then they would return and cling to the mother as tightly as before.

Recent Applications:

Later studies have shown that orphans deprived of a "normal" family life found adult models for their developmental behavior in whatever same-sex adults were closest tot hem during their early years.

Other studies citing Harlow have shown that adults who remember greater amounts of touching from their parents in early childhood have higher levels of social self-confidence.

Study # 18

Out Of Sight, But Not Out Of Mind

Piaget, J (1954)

The development of object concept. The construction of reality in the child.

Introduction:

Many development psychologists believe that there is much more to acquiring intellectual abilities than simple learning. The prevailing view about intellectual development is that it is a process of maturation, much like physical development, that occurs in a predictable fashion from birth through adulthood. We know that practice is not sufficient in learning a new behavior. You can practice walking with a six month infant eight hours a day, but the child will not learn to walk. The child has not reached the physical maturity to be able to walk.

Intellectual, or cognitive, development is seen in much the same way. Jean Piaget also believed this, and formed his own theory about cognitive development.

Theoretical Propositions:

While working in a laboratory with children, he noticed that children at similar age levels made similar mistakes in logic and reasoning. Piaget theorized that older children had not just learned more than the younger ones, but were thinking differently about problems.

He theorized that all humans develop through four stages of cognitive development that always occur in the same sequence and at approximately the same ages.

Piaget focused on a key intellectual skill called "object permanence". Object permanence refers to your ability to know that an object exists even when it is out of reach of your senses. If a person is holding a card in his hand and then hides it behind his back, we know the card still exists.

Method and Results:

First, one of the most interesting things about this study is that Piaget studied his own children. Today we would question this method, but Piaget's finding from his children have been successfully applied to all children universally.

Piaget use unstructured evaluation methods. he would play games with the children, and then record the errors in problem solving abilities during the game. With these observations, Piaget theorized four different stages that all children move through:

TABLE 1 Piaget's Stages of Cognitive Development

STAGE	AGE RANGE	MAJOR CHARACTERISTICS
Sensori-motor	0–2 years	• All knowledge is acquired through senses and movement (such as looking and grasping) • Thinking is at the same speed as physical movement • Object permanence develops
Pre-operational	2–7 years	• Thinking separates from movement and increases greatly in speed • Ability to think in symbols • Non-logical, "magical" thinking • Animism: all objects have thoughts and feelings • Egocentric thinking: unable to see world from others' points of view
Concrete operations	7–11 years	• Logical thinking develops, including classifying objects and mathematical principles, but only as they apply to real, concrete objects • Conservation of liquid, area, volume • Ability to infer what others may be feeling or thinking
Formal operations	11 and up	• Logical thinking extends to hypothetical and abstract concepts • Ability to reason using metaphors and analogies • Ability to explore values, beliefs, philosophies • Ability to think about past and future • Not everyone uses formal operations to the same degree, and some not at all

Discussion:

Piaget contended that all of his stages applied universally to all children, regardless of cultural or family background. He also stressed several important aspects relating to the stages of object permanence during the sensori-motor stage:

1. The ages stated are approximate, because his initial study involved only three children. However, as his research continued, the ages described Piaget have proven to be, on average, quite accurate.
2. Piaget maintained that all children must pass through each stage before going to the next stage.
3. Changes from one stage to another occur gradually, so that errors in one slowly decrease as new intellectual abilities mature. He believed that it was possible for children to be between two stages.
4. Behaviors from a lower stage do not necessarily disappear when the child moves to the next stage.

Criticisms and Recent Applications:

Many theorists criticize Piaget's distinct stages. They believe that intellectual development is more continuous. Other critics claim that the age ranges are incorrect, and that some cognitive skills may even be present at birth. Object permanence is one of the abilities that have been questioned. A developmental psychologist, Renee Baillargeon, has demonstrated the infants as young as 3 months old appear to posses object permanence. She believes Piaget's methods were inadequate to measure the abilities of very young infants.

However, many other psychologists use Piaget's study as a basis for the their research. Zelazo, Frye and Rapus (1996) found the children as old as 3 years old could learn the rules for certain cognitive tasks, but could not apply the rules. In another study, New Zealand Parakeets were found to develop object permanence in a very similar sequence to humans (Funk, 1996)!

Study # 19

How Moral Are You?

Kohlberg, L.
Sequence and development of moral thought

Introduction:

Morals are generally defined by psychologists as attitudes and beliefs that people hold that help them decide what is right and wrong. Your concept of morality is determined by the rules and norms of conduct that are set forth by the culture in which you have been raised. Morality is not something you are born with which leads us to the question of where did your morality come from? Following Jean Piaget's cognitive development theory, Lawrence Kohlberg (1927-1987) theorized that the unique human ability to make moral judgments develops in predictable stages during childhood.

Theoretical Propositions:

When Kohlberg referred to "structural moral stages in childhood and adolescence," he meant that:

1. Each stage is a unique different kind of moral thinking and not just an increased understanding of the adult concept of morality.
2. The stages always occur in the same step-by-step sequence so that no stage is ever skipped and there are no backward progressions.
3. Once someone moves on to a higher stage, they comprehend all stages below that stage.
4. These stages occur in the same order, regardless of individual differences in experience and culture.

Method:

Kohlberg presented children of varying ages with 10 hypothetical moral dilemmas. The most common being one where a druggist charges $2,000 for a dose of medicine that cost him $200 to make. A man whose wife needs the drug to live can't afford it and the druggist won't change his asking price. The man finally decides to break into the druggist store and steal the drug for his wife. The child is asked if the husband should have done this. Each child was interviewed for two hours and asked questions about the moral issues presented in the dilemmas. Based on these statements, Kohlberg developed six types of motives the subjects used to justify their reasoning which he then corresponded to the six stages of moral development.

Results:

Kohlberg grouped the six stages he had found into three moral levels (see chart below). Egocentrism and personal interests characterize the earliest stage of morality called the "premoral" level. In stage 1, the child fails to recognize the interests of others and behaves morally out of fear of punishment for bad behavior. In stage 2, the child begins to recognize the interests and needs of others, but behaves morally in order to get rewards by another person or society.

The "conventional" morality level includes stage 3, where the child behaves morally to live up to the expectations of others and maintain relationships. The Golden Rule develops here (treat others how you want to be treated). Stage 4 takes the viewpoint that good behavior is being a law-abiding citizen.

Upon entering the "self-accepted" moral level a person enters into stage 5 when they recognize that some laws are better than others and sometimes doing what is moral may not be doing what is legal. This person still believes laws should be obeyed to maintain order but may

seek to change the laws through due process. Finally, stage 6 is when a person's moral judgment will be based upon the belief that there are universal ethical principles and when these are violated a person has the right to behave according to these ethical principles even if it means breaking the law. Kohlberg felt that as a person grew older they advanced through these stages and that these were not learned principles but constructed by each individual's mind.

TABLE 1 Kohlberg's Six Stages of Moral Development

LEVEL 1. PREMORAL LEVEL	
Stage 1.	Punishment and obedience orientation (consequences for actions determine right and wrong)
Stage 2.	Naive instrumental hedonism (satisfaction of one's own needs defines what is good)
LEVEL 2. MORALITY OF CONVENTIONAL ROLE-CONFORMITY	
Stage 3.	"Good boy–nice girl" orientation (what pleases others is good)
Stage 4.	Authority maintaining morality (maintaining law and order, doing one's duty is good)
LEVEL 3. MORALITY OF SELF-ACCEPTED MORAL PRINCIPLES	
Stage 5.	Morality of agreements and democratically determined law (society's values and individual rights determine right and wrong)
Stage 6.	Morality of individual principles of conscience (right and wrong are a matter of individual philosophy according to universal principles)

Criticisms:

The most common criticism is that even if Kohlberg was correct in his ideas of moral reasoning, this does not mean that they can be applied to moral behavior. People may say one thing but what they actually do is quite different. Kohlberg also failed to recognize how situational forces can influence how one will act morally but this does not mean they lack a certain level of moral reasoning.

Another criticism is that Kohlberg stated the six stages were universal. Critics argue that Kohlberg's stages represent a Western interpretation of morality and would not apply to other cultures. However, 45 separate studies in 27 different cultures found that the subjects passed through all the stages in the same sequence. Collectivist cultures though showed moral judgments that don't readily fit into Kohlberg's stages.

Finally, critics argue that Kohlberg's stages may not apply equally to males and females. Carol Gilligan maintained that women and men do not think about morality in the same way. She found that women talked more than men about interpersonal relationships, responsibility for others, avoiding hurting others, and the importance of connections among people. She called this care orientation, which she said resulted in women scoring lower on Kohlberg's scale because the lower stages deal more with these relationship issues. Men meanwhile based their decisions on issues of justice, which fit into Kohlberg's higher stages.

Study # 20

In Control and Glad of it!

Langer, E.J., & Rodin, J. (1976)
The effects of choice and enhanced personal responsibility for the aged: A field experiment in an institutional setting.

Introduction:

Most of us feel that we have at least some control over our individual destinies. You have made choices in your life and they have brought you to where you are today. If our need to control our personal environment is as basic to human nature as it appears to be, what do you think would happen if that control were taken away from you and you were unable to get it back? Studies have shown that when people are placed in stressful situations, the negative effects of the stress can be reduced if the subjects believe they have some control over the stressful event. We are happier and more effective people when we have the power to choose. Unfortunately in our society, there comes a stage in many people's lives when they lose this power; when they are no longer allowed to make even the simplest of choices for themselves. This life stage is called old age. One of the most difficult transitions elderly people must go through when entering a "home" is the loss of the personal power to control their daily activities and influence their own destinies. Langer and Rodin decided to put these ideas to the test.

Theoretical Propositions:

If the loss of personal responsibility for one's life causes a person to be less healthy, then increasing control and power should have the opposite effect. Langer and Rodin predicted that patient's in a nursing home who were given more personal control should demonstrate improvements in mental alertness, activity level, satisfaction with life, and other measure of behavior and attitude.

Method:

Langer and Rodin obtained the cooperation of a Connecticut nursing home called Arden House. Two floors were randomly selected for the two treatment conditions. Fourth-floor residents (8 men and 39 women) received the "increased responsibility" treatment. The second floor was designated as the comparison group (9men and 35 women). These 91 subjects ranged in age from 65 to 90.

The nursing home administrator called two separate meeting with the two floors. The two messages informed the residents of the home's desire that their lives there be as comfortable and pleasant as possible and discussed several of the services that were available to them. However, within these messages there were some important differences for the two groups. The "responsibility induced group" (fourth floor) was told that they had the responsibility of caring for themselves and deciding how they should spend their time. They could rearrange their room, and they are allowed to make complaints known

to the administration. They were each awarded with a plant as a gift, that the patients would be personally responsible for. Finally, they were aware that movies were being shown on Thursday and Friday nights; they could pick their movie not, or not attend at all.

The comparison group (second floor) was told how much the home wanted to make their lives fuller and more interesting. They were told that they have very nice rooms, but were not given the option to rearrange the furniture. Each received a plant as a gift, but the nurses will be caring for the plants. Finally, they were told that movies would be shown on Thursday and Friday nights, and the staff will let them know on which day they are scheduled to see the movie. The fourth floor group was given the opportunity to make choices and exercise control over their lives in various ways. The second-floor group, while other factors were basically the same, was given the message that most of their decisions would be made for them.

The results were measured throughout the use of questionnaires. Two questionnaires were given one week before the director's talk and again three weeks after. one questionnaire was given to the residents; it asked questions about how m much control they felt they had how active and happy they were at the home. The other questionnaire was given to nurses on each floor, asking them to rate patients on 10 point scales for how happy, alert, dependent, sociable, and active they were and about their sleeping and eating habits. Records were kept of the attendance a the movie being shown each week. Finally, there was a contest held for patients to guess how many jelly beans there were in a jar. Resident could enter the contest by writing their guess and name on a slip of paper, and putting it into an entry box.

Results:

The residents in the increased-responsibility group reported that they felt happier and more active than those in the comparison group. Also the interviewer's rating of alertness was higher for the fourth-floor residents. even greater differences were seen on the nurses' ratings. They determined that, overall, the increased-responsibility group's condition improved markedly over the three weeks of the study, while the comparison group in general was seen to decline. Fourth-floor residents visited others more, and spent more time talking to staff members.

The behavioral measures that were taken also supported the hypothesis. Significantly more fourth-floor residents attended the movie. Also, ten residents from the fourth-floor played the jelly bean game, while only one from the second floor did so.

Discussion:

Langer and Rodin demonstrated that when people who have been forced to give up their control and decision-making power are given a greater sense of personal responsibility, their lives and attitudes improve.

Significance of Findings and Subsequent Research:

Eighteen months after their first study, Langer and Rodin returned to Arden House for a follow-up to see if the increased-responsibility conditions had any long-term effects. For the patients still in residence, ratings were taken from doctors and nurses. Also, Rodin gave a special talk on psychology and aging to the residents. They counted the number of residents from the original study, and recorded the frequency and type of questions asked.

Ratings from nurses demonstrated continued superior condition of the increased-responsibility group. The health ratings from the doctors also indicated an increase in overall health status for the experimental group, compared to a slight decline in health for the control residents. Although the number of residents that attended the lecture was about the same from each group, most of the questions were asked by the increased-responsibility subjects, and the content of the questions were related to autonomy and independence. Probably the most important finding was that 30% of the subjects in the comparison group had died during the 18-month interval. For the experimental group, only 15% had died during that time.

One criticism of the research was that whenever you conduct a study like this, you must take the well-being of the subjects into careful consideration. After giving the fourth-floor residents increased responsibility, you can not just take it away after the study. A study by Schulz (1976) allowed nursing home residents to have varying amounts of control over when they would be visited by local college students. The residents with the most control showed significant improvement, just like in the Langer and Rodin study. However, when the study was completed and the students stopped visiting, this led to greater debilitation in health of the experimental group than of those residents who were never exposed to the increased-control situation.

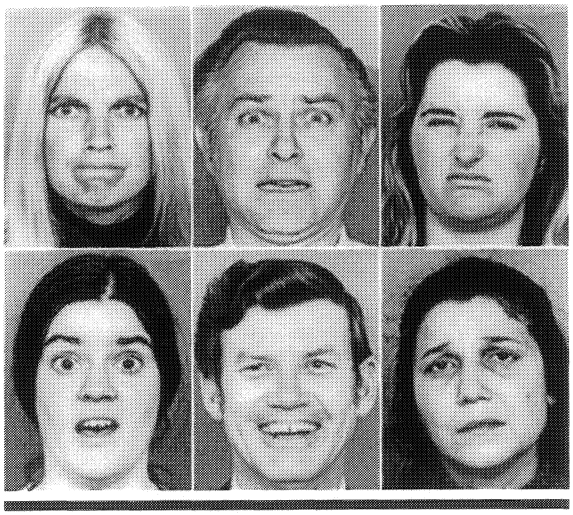
Recent Applications:

A study by Conwell, Pearson, ad Derenzo (1996) found that while suicide is rare among the elderly in nursing homes, other self-destructive behaviors that could potentially cause early death, such as purposely not eating or refusing to take medications, are fairly common. The authors reason that this may be the only patients control: they can choose to not eat and to not take the medication.

Another study found that while nursing home staff nurses believed older people should be given freedom of choice in their daily lives, they also employed various tactics to deny such choice to their patients, such as compromising, massive encouragement, and forcing (Draper, 1996).

Boschen (1996) found that among adults with spinal cord injuries, satisfaction with living conditions could be predicted reliably by their perception of how much choice they had over where they lived and their daily activities.

Emotion & Motivation



Study # 21: I Can See It All Over Your Face
Study # 22: Life, Change, & Stress
Study # 23: Thoughts Out of Tune

Study # 21

I Can See It All Over Your Face!
Ekman, P., & Friesen, W.V. (1971)
Constants across cultures in the face and emotion.

Introduction:

Undoubtedly, certain facial expressions coincide with specific emotions. Most of the time you can probably tell how people are feeling emotionally from the expressions on their faces. Could you be equally successful in determining someone's emotional state based on facial expression if that person is from a different culture? In other words, do you believe facial expressions of emotion are universal? What was needed to prove the universality of emotional expression was a culture that had not been exposed to any of these things. Ekman and Friesen traveled to the Southeast Highlands of New Guinea to find subjects for their study among the Fore people who existed then as an isolated Stone Age society. Many of the members of this group had no experience with the outside world. Therefore, they had not been exposed to emotional facial expressions other than those of their own people.

Theoretical Proposition:

The theory underlying Ekman and Friesen's study was that the specific facial expressions corresponding to basic emotions are universal.

Method:

Ekman and Friesen chose 189 adults and 130 children from the South Fore population. For comparison, there were also 23 adults chosen who had experienced a great deal of contact with Western society through movies and attending missionary schools.

The experimenters showed the subjects three photographs of different facial expressions and read a brief description of an emotion-producing scene that corresponded to one of the photographs. The subject the pointed to the expression that best matched the story. These photographs had been validated previously by showing them to members of various other cultures. Each photograph had been judged by at least 70% of observers in at least two literate Western or Eastern cultures to represent the emotion being expressed.

These were photographs of Western facial expressions of emotions. So, could the Fore people correctly identify the emotions in the photographs, even though they had never seen a Western face before?

Results:

First, analyses were conducted to see if there were differences between males and females or between adults and children. No significant differences in ability to correctly identify the emotions in the photographs were found between any of the groups. The following table shows the results of the experiment:

Emotion	**Percent choosing correct photograph**
Happiness	92.3
Anger	85.3
Sadness	79.0
Disgust	83.0
Surprise	68.0
Fear	80.5
Fear (with surprise)	42.7

All of the percentages were statistically significant except when subjects were asked to distinguish fear from surprise. Surprise was easily confused with fear. These results were similar to results of a similar study in Western cultures.

Discussion:

Ekman and Friesen were very confident in the results of their study: "The results for both adults and children clearly support our hypothesis that particular facial behaviors are universally associated with particular emotions." As a way of double-checking their study, they videotaped members of the Fore culture portraying six facial expressions. They later showed these videos to American college students. The student correctly identified the expressions corresponding to each of the emotions.

The one consistent exceptions was the confusion between fear and surprise. This might be because, often, fearful events are also surprising.

Implications and Recent Applications:

This study served to demonstrate scientifically that facial expressions of emotions are universal. This relates to the nature-nurture debate. Since facial expressions for the six emotions used in this study appear to not be influenced by culture, they must be innate; or biologically "hard-wired" in us at birth.

Most researchers agree that these six emotions (happiness, anger, sadness, surprise, disgust, and fear) are the most basic and most universal.

Ekman and Friesen also thought these universal emotions were necessary for survival. If certain messages could be communicated within and across species, survival

would be enhanced. An expression of fear could be a message to others that danger is imminent. Facial expressions would do animals no good if they weren't universal amongst the species.

There have been many other studies conducted that support Ekman and Friesen's study. A study was done analyzing facial expressions by actors in feature films (Carroll and Russell, 1997). Actors only made slight facial changes to convey the different emotions, and with only slight facial changes, could convey these emotions successfully. This suggests that were are even more skilled at recognizing expressions for basic emotions than Ekman claims, in that only a single facial change may be all we need to detect the underlying emotion. Finally, Gazzaniga (split brain research) found that both hemispheres perform equally well on a task matching expressions with the words for emotions. So we use both sides of our brain in facial expression recognition.

Conclusion:

The "facial feedback theory" of emotional expression states that the expression on your face actually feeds information back to your brain to assist you in interpreting the motion you are experiencing. When you smile, the muscles around your mouth send a message to your brain, which tells you that you are smiling and therefore should be happy.

Ekman did another study on lying. Although the facial expressions can tell you when a person is lying, the body provides better clues that a person is lying.

Study # 22

Life, Change, and Stress
Holmes, T.H., &Rahe, R.H. (1967)
The social readjustment rating scale.

Introduction:

The connection between stress and illness if the focus of this study by Thomas Holmes and Richard Rahe. Together, psychology and medicine over the past couple of decades have established with a high degree of certainty that this connection does exist. Psychosomatic illness refers to health problems that are caused primarily by psychological factors rather than physical ones.

Many studies by health psychologists have established that when certain external changes occur in people's lives requiring them to make psychological adjustments, there is a tendency for a higher incidence of illness. These changes have been termed "life stress". Holmes and Rahe devised a scale to measure "life stress".

Method:

Holmes and Rahe compiled a list of 43 life events that people commonly feel are stressful. This list was presented to 394 subjects, who were asked to rate each item on the list for the amount of stress produced by the event. Subjects were then instructed to assign a point value to each event relative to the 500 value given to marriage. All the subjects' ratings for each item were averaged and then divided by 10 to arrive at a score for the individual items. This created a measuring device, known as the "Social Readjustment Rating Scale".

Results:

As you can see by the scale, "death of a spouse" was rated the most stressful, whereas "minor violations of the law" was rated as the least stressful of the items. Also, notice that many positive things are also considered stressful, such as Christmas, marriage, and vacations. There seemed to be no difference in perceptions of stress amongst genders, socioeconomic groups, religions and cultures.

Discussion:

There was a clear common theme to all the life events listed on their scale: every time one of these stressful events occurs in someone's life, it requires some degree of adaptation, change or coping. Each stressful event has a number assigned to it, known as Life Change Units (LCUs). Calculate your LCU total over the past 12 months. This

TABLE 1 The Social Readjustment Rating Scale

RANK	LIFE EVENT	MEAN VALUE
1	Death of spouse	100
2	Divorce	73
3	Marital separation	65
4	Jail term	63
5	Death of close family member	63
6	Personal injury or illness	53
7	Marriage	50
8	Fired at work	47
9	Marital reconciliation	45
10	Retirement	45
11	Change in health of family member	44
12	Pregnancy	40
13	Sex difficulties	39
14	Gain of new family member	39
15	Business readjustment	39
16	Change in financial state	38
17	Death of close friend	37
18	Change to different line of work	36
19	Change in number of arguments with spouse	35
20	Mortgage over $10,000	31
21	Foreclosure of mortgage or loan	30
22	Change in responsibilities at work	29
23	Son or daughter leaving home	29
24	Trouble with in-laws	29
25	Outstanding personal achievement	28
26	Wife begin or stop work	26
27	Begin or end school	26
28	Change in living conditions	25
29	Revision of personal habits	24
30	Trouble with boss	23
31	Change in work hours or conditions	20
32	Change in residence	20
33	Change in schools	20
34	Change in recreation	19
35	Change in church activities	19
36	Change in social activities	18
37	Mortgage or loan less than $10,000	17
38	Change in sleeping habits	16
39	Change in number of family get-togethers	15
40	Change in eating habits	15
41	Vacation	13
42	Christmas	12
43	Minor violations of the law	11

(from p. 216)

gives you an estimate of your amount of life stress. Holmes and Rahe believed that there is a correlation between your LCU score and the probability of illness.

Subsequent Research:

Later research has shown that when and LCU is calculated over 6 months, that people with a score under 100 reported and average of 1.4 illnesses, compared with those between 300 and 400 averaged 1.9 illnesses. Those with a score between 500 and 600 average 2.1 illnesses. These and other studies have generally supported Holmes and Rahes contention that the SRRS can be helpful in predicting stress-related illness.

Criticisms:

Many researchers have expressed concerns about its accuracy and usefulness. Research has shown that stressful negative events are much more predictive of illness than stressful positive events.

Also, when carefully analyzed statistically, the predictive relationship between your LCU score and illness is a small one. If you examine 1000 people to see who becomes sick over a six-month period, there will be a great variation in the individual factors leading to their illness or lack of illness. The LCU score, or stress level, is only one factor that can predict an illness.

Finally, the studies using the SRRS have not taken into account the number of illnesses, the seriousness of the illnesses, or the length of the illnesses.

Recent Applications:

Despite the many criticisms, the SRRS continues to be the stress assessment tool chosen by researchers. A study of over 5000 pregnant Danish women found that highly stressful life events significantly increased the risk of premature birth (Hedegaard, Henriksen, Secher, Hatch, and Sabroe, 1996). The study found that the most dangerous time for stressful events to occur during pregnancy was between the 16th and 30th week.

Other applications of the SRRS for which professional studies may be found include: cigarette smoking, immune response, posttraumatic stress disorder, police officer burnout, child abuse, breast cancer, diabetes, medical school success, chronic illnesses, effects of the Gulf War on spouses and children of deployed soldiers, HIV infection and AIDS, the psychological effect of natural disasters, divorce, and the aging process.

Conclusion:

Rahe suggested that in addition to an LCU score, several factors present in each individual must be considered to predict psychosomatic illness:

1. How much experience you have had with stressful events.
2. Your coping skills – can you defend yourself in times of stress?
3. The strength of your physiological systems to defend your body against the life stress.
4. How you deal with illness when it does occur (do you seek medical help?)

Study # 23

Thoughts Out Of Tune

Festinger, L., & Carlsmith, J.M. (1959)
Cognitive consequences of forced compliance

Introduction:

Studies have shown that in some cases, when your behavior is contrary to your attitude, your attitude will change in order to bring it into alignment with your behavior. For example, if a person is forced to deliver a speech in support of a viewpoint opposed to his or her own opinion, the speaker's attitudes will shift toward those given in the speech.

Further studies were done to see how rewards affected attitude in the above situations. It was found that larger rewards produced less attitude change than smaller rewards. So if a person was offered $100 to give a speech that was opposite of their position, they were less likely to change their attitude than when offered $10. We will do things just for the money, even if we do not agree with it.

Leon Festinger proposed the theory of cognitive dissonance. Festinger suggested you will experience cognitive dissonance when you simultaneously hold two or more cognitions which are psychologically inconsistent. When this condition exists, it creates discomfort and stress. This discomfort motivates you to change something in order to reduce the stress. Since you cannot change your behavior (because you have already performed it), you change your attitudes.

Theoretical Propositions:

If you believe "X", but publicly state "not X", you will experience cognitive dissonance. If your reasons for stating "not X" are of your own choosing, not because of a grade, or monetary reward, your dissonance will be greater.

Festinger also theorized, that changes in attitudes and opinions will be greatest when dissonance is large.

Method:

The subjects were 71 male psychology students that were required to participate in an experiment for college credit. The subjects were required to perform an incredibly boring task for 60 minutes. The purpose of the task was to provide an experience about which the subject would have a negative opinion.

The subjects were divided into three different groups. After the boring task was completed, the control group subjects were taken to a different room and were interviewed about the task they had just completed. The experimenter talked to the remaining subjects in another room. He fabricated a lie and told them that they were all in

group A, a group that had no prior information about the boring task. He said that there was also a group B. This group B, he said, was told prior to doing the task that the task was really very fun. This group A/group B story was a lie.

Then the experimenter left the room for a few minutes. He returned a little later, acting embarrassed. He lied again, and said that the assistants that usually help him did not show up, and would they please help him with the experiment. So he wanted his subjects who had just completed the 60 minute boring task to work with the "Group B" subjects and lie and tell them the task that they are about to do is fun.

Here is where the remaining subjects were split into two different groups. One group of the subjects were offered $1 to help (and lie), where the other subjects were offered $20 to help (and lie). So basically, these new helpers had already done the boring task, and were assigned the job to tell new subjects that the boring task was actually very fun. So there was a control group, a $1 lying group, and a $20 lying group.

Results:

After the experiment was over, after they had done the task, and then lied about the task, were asked to rate how enjoyable the tasks were. The $1 subjects were the ones who later reported liking the tasks more, compared with both those paid $20 to lie and the control group.

Discussion:

When a person is asked to do something that is contrary to his opinion, he will be more likely to change his opinion to bring into correspondence with what he has said or done. Festinger's explanation was then when people engage in attitude-discrepant behavior (the lie), but have strong justification for doing so ($20), they will experience only a small amount of dissonance, and not make a change in their opinion. On the other hand, people who have small justification ($1) will have greater dissonance and feel more compelled to change their attitude.

Questions and Criticisms:

Over the years, other researchers have refined the cognitive dissonance theory. Cooper and Fazio (1984) outlined four necessary steps for attitude change to occur through cognitive dissonance.

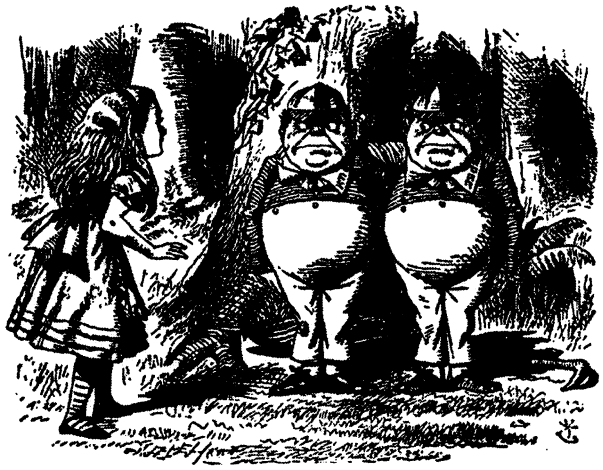
1. Attitude discrepant behavior must produce unwanted negative consequences. (the subjects lied and convinced others to do a boring behavior)
2. Personal responsibility must be taken for the negative consequences. This involves personal choice. ($1 is not sufficient reward, the subjects chose to lie).
3. Physiological arousal is a necessary component of cognitive dissonance. (we physiologically feel the discomfort of stress)

4. The person must be aware that the arousal experienced is being caused by the attitude-discrepant behavior. (they know they are feeling distressed because of the lie).

Recent Applications:

A study found that some people might work harder for less pay. A researcher in Norway reported that subjects receiving lower rewards responded more vigorously on a simple task than those receiving a greater payoff.

Personality



Study # 24: Are You the Master of Your Fate?
Study # 25: Racing Against Your Heart
Study # 26: The One; The Many…

Study # 24

Are You the Master of your Fate?

Rotter, J.B. (1966)
Generalized expectancies for internal vs. external control of reinforcement.

Introduction:

Are the consequences of your behavior under your personal control or determined by forces outside of yourself? Do you believe that there is a causal relationship between your behavior and its consequences?

Rotter proposed that people differ a great deal in where they place the responsibility for what happens to them. When people interpret the consequences of their behavior to be controlled by luck or fate, this is known as an "external locus of control". If people interpret their own behavior as responsible for behavioral consequences, then they have an "internal locus of control". Each person has developed an internal or external interpretation of the consequences for his behavior that will influence his future behavior in almost all situations. Rotter was curious to know how internal and external loci of control influenced personal behavior.

Theoretical Propositions:

1) Rotter predicted that a test could be developed to measure the extent which individuals possess an internal or external locus of control.
2) He hypothesized that people will display individual differences in their interpretations of the causes of reinforcement in the same situations.

Method:

Rotter designed a scale containing pairs of statements (see below). Each pair consisted of one statement reflecting an internal locus of control and one reflecting an external locus of control. The subjects were asked to select the statement they believed was truer, rather than the one they think they should choose, or would like to be true.

TABLE 1 Sample Items and Filler Items from Rotter's I-E Scale

ITEM #	STATEMENTS
2a.	Many of the unhappy things in people's lives are partly due to bad luck.
b.	People's misfortunes result from the mistakes they make.
11a.	Becoming a success is a matter of hard work; luck has little or nothing to do with it.
b.	Getting a good job depends mainly on being in the right place at the right time.
18a.	Most people don't realize the extent to which their lives are controlled by accidental happenings.
b.	There is really no such thing as "luck."
23a.	Sometimes I can't understand how teachers arrive at the grades I get.
b.	There is a direct connection between how hard I study and the grades I get.

Rotter called his test the "I-E Scale". Rotter's next step was to demonstrate that this characteristic could actually be used to predict people's behavior in specific situations.

Results:

Gambling: Internals: prefer betting on "sure things" and didn't like to be on long shots.
Externals: waged more money on risky bets.

Hospitalization: Internals: more aware of physical condition, and interacted more with the staff

Political Activism: Internal African Americans were more likely to participate in marches and join civil rights groups.

Persuasion: Internals are more successful than externals in altering attitudes of others. Internals are less likely to be manipulated and persuaded by others.

Smoking: Smokers then to be externals; successful quitters tend to be more internal.

Achievement Motivation: Internal high school students have plans to attend college and spend more time on homework.

Conformity: Internals conformed less to the majority in a conformity experiment.

Discussion:

Rotter believed there were three possible causes for developing either internal or external locus of control:

1) Culture: Rotter examined three different cultures in the U.S. Ute Indians were the most external, white Americans were the most internal, and Mexican-Americans scored in-between.
2) Socioeconomic differences: People of lower socioeconomic status have greater external locus of control.
3) Parenting Styles: Parents who reward and punish in an unpredictable fashion encourage external loci of control in their children.

Rotter believed that locus of control is consistent across situations. He also believed that because of differing loci of control, different people will behave differently in similar situations.

Subsequent Research:

Strickland (1978) found that individuals with an internal focus generally take more responsibility for their own health. They are more likely to engage in healthy behaviors. Internals tend to have lower levels of stress.

Research has shown that parents of children who are internals tend to be more affectionate, more consistent with discipline, and more concerned with teaching children to take responsibility for their actions (Davis and Phares, 1969).

Recent Applications:

There seems to be a connection between locus of control and depression (Presson and Benassi, 1996). Subjects with a lack of belief in an internal locus of control showed higher levels of depression. This brought up the question of religion. If people believe that God is in control of their lives, do they have the same experiences as people with external loci of control? It was found that the advantages associated with an internal locus of control were also found in the subjects scoring high on the God-control dimension. If a person has an external locus of control, but the external power is perceived as a strong faith in a supreme being, they will be less subject to the typical problems associated with externals.

Conclusion:

A person's locus of control can change under certain circumstances. Those who are externally oriented often will become more internal when their profession places them in positions of greater responsibility. Internals may become more external in times of great stress. Also, it is possible for people to learn to be more internal.

The environment causes one of the frustrations of internals. If a person sets out to change a situation that is not changeable, frustration, disappointment, and depression are potential outcomes.

Study # 25

Racing Against Your Heart

Friedman, M., & Rosenman, R.H. (1959)
Association of specific overt behavior pattern with blood and cardiovascular findings.

Introduction:

There is one group of characteristics related to health, popularly known as the Type A personality. This behavior pattern was first reported in the late 1950s by two cardiologists, Meyer Friedman and Ray Rosenman, and it has had a huge influence on how we view the causes of certain illnesses.

Theoretical Propositions:

One day, Dr. Friedman was having the upholstery on his office furniture replaced. The upholsterer pointed out that the material on the couches and chairs had not worn out in a normal way. Instead, the from edges of the seat cushions had worn away faster than the rest had. It was as if Dr. Friedman's cardiac patients were sitting on the edge of their seats. Dr. Friedman began to wonder if there something different about the overall behavior of his patients compared with that of healthy people.

Friedman and Rosenman decided to test the common belief that people exposed over long periods of time to chronic stress from excessive drive, pressure to meet deadlines, competitive situations and frustrations are more likely to develop heart disease.

Method:

First, Friedman and Rosenman defined Type A and Type B behavior patterns:

Type A: 1) intense drive to achieve personal goals 2) very competitive 3) desire for recognition and advancement 4) continuous involvement in multiple activities subject to deadlines 5) tendency to rush to finish activities 6) extraordinary mental and physical alertness.

Type B: relative absence of drive, ambition, sense of time urgency, desire to compete, or involvement in deadlines.

Friedman and Rosenman needed to find subjects that fit the A and B patterns. They contacted managers of various businesses and asked the managers to select employees that fit these patterns. There were 83 men in each group. The average age of the A group was 45; the average age of the B group was 43.

First, each subject was interviewed to assess the history of Coronary Heart Disease (CHD) in his parents. The subjects were also observed during this period to determine if they truly fell into the Pattern A/ Pattern B group.

Second, the subjects were asked to keep a detailed diary of everything they ate or drank over one week's time.

Third, each subject's cholesteral level was checked.

Finally, the number of subjects with arcus senilis was determined through illuminated inspection of the subjects' eyes. Arcus senilis refers to the formation of an opaque ring around the cornea of the eye caused by the breakdown of fatty deposits in the blood stream.

Results:

Their were significant differences between the two groups on certain traits correlated with heart related illnesses. The slower your blood clots, the less our risk of heart related illness. Type Bs blood clots significantly slower than Type As.

Cholesterol levels were clearly and significantly higher for group A subjects. The incidence of arcus senilis was three times greater for Type As. Finally, there was a striking difference in the incidence of clinical coronary heart disease found in the two groups. IN group A, 23 of the subjects exhibited clear evidence of CHD, compared with only 3 men in group B.

Discussion of Findings:

The conclusion implied by the authors was that the Type A behavior pattern was a major cause of CHD and related blood abnormalities. However, there are a couple of alternative explanations. More men in group A reported a greater incidence of CHD in parents. Maybe their CHD is genetic, rather than "Type A" induced. Also, the Type As smoke many more cigarettes than the Type Bs. Maybe it is the cigarettes, and not the personality.

However, when Friedman and Rosenman examined these criticisms, they found when comparing light smokers to light smokers in each group, there were still significant differences that favored CHD in the Type A group.

Significance of the Research and Subsequent Findings:

Friedman's and Rosenman's study was significant for three reasons:

1) This was one of the earliest systematic studies to establish causal relationships between personality and illness
2) This study began a new line of scientific inquiry into the relationship between behavior and CHD that has produces scores of research articles. We now know we may be able to prevent heart attacks in Type A people.
3) This study played an important role in the creation and growth of health psychology.

What is it about the Type A behavior pattern that causes CHD? Type As respond to stressful events by becoming excessively physiologically aroused. This arousal causes the body to produce more hormones and increases blood pressure and heart rate. Over time these changes damage arteries and leads to heart disease.

Recent Applications:

Magavita (1997) performed a study that clearly indicated that subjects with Type a behavior patterns had a significantly higher risk of being involved in traffic accidents.

Wenneberg (1997) found that subjects who engaged in greater outward expressions of anger showed increases in accumulation of platelets (clotting agents) in their blood during a timed arithmetic test. Abnormally high levels of platelets can lead to blood clots, which can cause heart attacks and strokes.

Forgays (1996) found that teenage children of Type A parents tend to be Type As themselves. We are unsure if Type A is inherited, or learned in the household. Probably a little bit of both.

Conclusion:

Below are some questions that can help you determine if you are Type A or Type B. See how many apply to you.

1. Frequently doing more than one thing at a time.
2. Urging others to hurry up and finish what they are saying.
3. Becoming very irritated when traffic is blocked or when you are waiting in line.
4. Gesturing a lot while talking.
5. Having a hard time sitting with nothing to do.
6. Speaking explosively and using obscenities often.
7. Playing to win all the time, even with children.
8. Becoming impatient when watching others carry out a task.

Study # 26

The One; The Many...
Triandis, H., Bontemp, R., Villereal, M., Asai, M., & Lucca, N. (1988)
Individualism and Collectivism: Cross-cultural perspectives on self-ingroup relationships.

Introduction:

Over the past 30 to 40 years, the field of psychology has increasingly embraced the belief that one very powerful environmental influence on humans is the culture in which they live. But how would you go about unraveling all of the cultural factors that have combined to influence who you have become? Harry Triandis, from the University of Chicago attempted to do just this.

Triandis' research attempts to examine the differences between Individualistic and Collectivist cultures. A Collectivist Culture is one in which the individual's needs, desires, and outcomes are secondary to the needs, desires, and goals of the larger group to which the individual belongs, called an ingroup. Ingroups may include a family, a tribe, a village, a professional organization, or even an entire country depending on the situation. A great deal of behavior of individuals is motivated by what is good for the larger group as a whole, rather that that which provides maximum personal achievement for the individual. Individuals look to their ingroup to help meet their emotional, psychological, and practical needs.

Individualistic cultures, on the other hand, place a higher value on the welfare and accomplishments of the individual than on the needs and goals of the larger ingroups. The influence of the ingroup on the individual is rather small. Individuals feel less emotional attachment to the group and are willing to leave an ingroup if it becomes too demanding and join or form a new ingroup. Individualistic cultures tend to be in Northern and Western Europe.

Theoretical Propositions:

Triandis states:

> " Culture is a fuzzy construct. If we are to understand the way culture relates to social psychological phenomena, we must analyze it by determining dimensions of cultural variation. One of the most promising such dimensions is individualism--collectivism."

So, his assumption underlying this and many of his studies and publications, is that when cultures are defined and interpreted according to the individualism--collectivism model, we can explain a large portion of the variation we see in human behavior, social interaction, and personality.

Table 1 Differences Between Collectivist and Individualistic Cultures*

COLLECTIVIST CULTURES	INDIVIDUALISTIC CULTURES
• Sacrifice: emphasize personal goals over ingroup goals	• Hedonism: focus on personally satisfying goals over ingroup goals
• Interpret self as extension of group	• Interpret self as distinct from group
• Concern for group is paramount	• Self-reliance is paramount
• Rewards for achievement of group	• Rewards for personal achievement
• Less personal and cultural affluence	• Greater personal and cultural affluence
• Greater conformity to clear group norms	• Less conformity to group norms
• Greater value on love, status, and service	• Greater value on money and possessions
• Greater cooperation with in group, but less with outgroup members	• Greater cooperation with members of ingroup and members of various outgroups
• Higher value on "vertical relationships" (child-parent; employer-employee)	• Higher value on "horizontal relationships" (friend-friend; husband-wife)
• Parenting through frequent consultation and intrusion into child's private life	• Parenting through detachment, independence, and privacy for the child
• More people oriented in reaching goals	• More task oriented in reaching goals
• Prefer to hide interpersonal conflicts	• Prefer to confront interpersonal conflicts (leading to more lawsuits)
• Many individual obligations to the ingroup, but high level of social support, resources, and security in return	• Many individual rights with few obligations to the group, but less support, resources, and security from the group in return
• Fewer friends, but deeper, lifelong friendships with many obligations	• Make friends easily, but friends are less intimate acquaintances
• Few ingroups and everyone else is perceived as one large outgroup	• Many ingroups, but less perception of all others as outgroup members
• Great harmony within groups, but potential for major conflict with members of outgroups	• Ingroups tend to be larger and interpersonal conflicts more likely to occur within the ingroup
• Shame (external) used more as punishment	• Guilt (internal) used more as punishment
• Slower economic development and industrialization	• Faster economic development and industrialization
• Less social pathology (crime, suicide, child abuse, domestic violence, mental illness)	• Greater levels of all categories of social pathology
• Less illness	• Higher illness rates
• Happier marriages; less divorce	• Less happy marriages; higher divorce rates
• Less competition	• More competition
• Focus on family group rather than larger public good	• Greater concern for greater public good

* Summarized from Triandis, 1988, pp. 323–335.

Method:

This article reported on three seperate studies.

Study 1: Participants in Study 1 were 300 American graduate students from the University of Chicago. They were given a 158 question questionnaire structured to measure their tendencies toward collectivist versus individualistic behaviors and beliefs.

Results of Study 1: The results suggest that individualists are more concerned for one's own goals that the ingoup goals, are less attentive to ingroup views, are more self-reliant and competitive, and are more detached from the ingroup.

Study 2: Participants in Study 2 were 91 American University of Chicago students, 97 Puerta Rican students, 150 Japanese students, and 106 older Japanese individuals. This study wanted to explore the individuals concern for the group, their feelings of closeness to to the ingoup, and if they were willing to subordinate their own goals and instead choose the ingroup's goals.

Results of Study 2: The results were mixed. The Japanese (a collectivist culture) were significantly more concerned with the views of coworkers and friends than were the Puerta Ricans (also collectivists). The Japanese also feel personally honored when a member of their ingroup is honored.

Study 3: Participants in this study were 50 Americans and 50 Puerta Ricans. This study aimed to determine if there was more social support in collectivist cultures, and more loneliness in individualistic cultures.

Results of Study 3: As the degree fo collectivism increased, the social support also increased. Also, as the degree of collectivism increases, loneliness decreases.

Discussion:

Initially, individualistic and collectivist cultures appear to be nearly exact opposites of each other. However, we should look at each culture as lying on a continuum, falling between the two ends of the Individualist--Collectivist spectrum. In addition, within any single culture will be found specific individuals, groups, subcultures, and situations that may violate that culture's overall behavioral pattern.

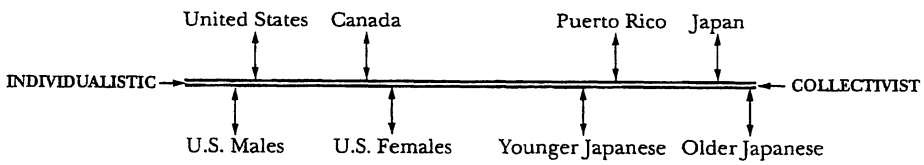


FIGURE 1 Collectivist—individualistic cultural continuum (Culture and subculture placement approximate).

Significance of Findings and Related Research:

Coronary Heart disease seems to be correlated to culture. In general, heart attack rates tend to be lower in colllectivist socieities than in individualistic ones. Triandis suggests that stressful lefe events often related to heart disease are more common in individualistic cultures where pressures are intense on solitary individuals to compete and achieve on their own. Numerous studies have shown that members of collectivist cultures who move to countries that are individualistic become increasingly prone to various illnesses including heart disease.

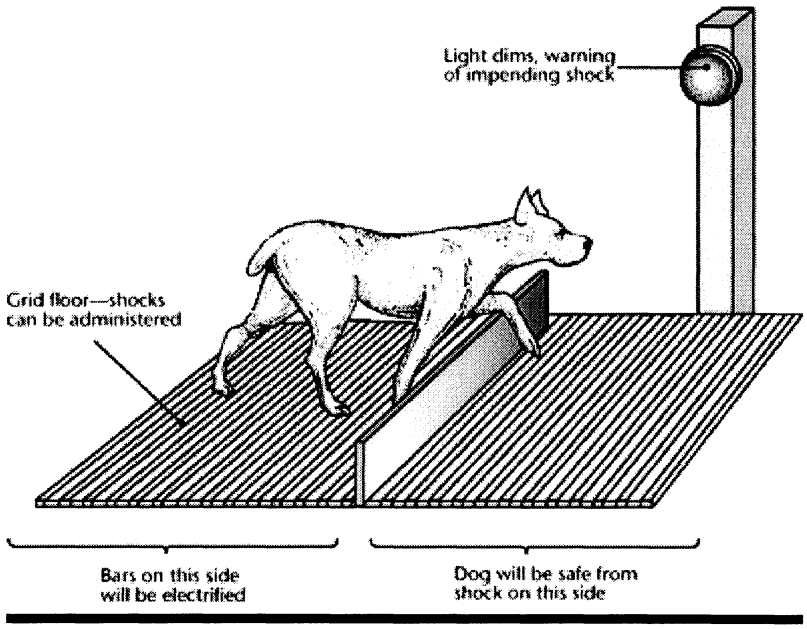
Culture also influences child rearing. Collectivist cultures encourage obedience and conformity to group norms, where indlividualistic parents encourage independence and self-reliance. What is rebellion in one culture is socially desirable in another culture.

Recent Applications:

One study applied Triandis' findings to a study about self-esteem. (Tafarodi & Swann, 1996). Self-esteem may be defined in various ways, but it usually implies two main factors: how much you like yourself as a person (self-liking), and how skilled you see yourself performing various tasks (self-competence). The researchers found that Chinese college students scored higher on the self-liking component of self-esteem, but the American students scored higher on the self-competence component. Members of collectivist cultures like themselves more, but seem to be less confident of their abilities, while members of individualistic cultures feel better about their task abilities, but are harder on themselves ("Cultural Tade-off Hypothesis").

Another study employed a cross-cultural approach to examine chidren's reactions to people with physical disabilities (Crystal, Watanabe, & Chen, 1999). Overall, the study found that children in a collectivist society were more likely to feel sorry for and worry about imposing on disabled individuals than the individualistic children. The American children were also more likely to express embarrassment for those in a disabled role.

Psychopathology


Light dims, warning of impending shock
Grid floor—shocks can be administered
Bars on this side will be electrified
Dog will be safe from shock on this side

Study # 27: Who's Crazy Here, Anyway?
Study # 28: You're Getting Defensive Again!
Study # 29: Learning to be Depressed
Study #30: Crowding Into the Behavioral Sink

Study # 27

Who's Crazy Here, Anyway?

Rosenhan, D.L. (1973)
On being sane in insane places.

Introduction:

What is the difference between normal and abnormal? The line that divides normal from abnormal is not all that clear. It is up to mental professionals to determine where abnormal begins and normal ends. To make this determination, mental health professionals use the following criteria:

1) Bizarreness of behavior: A judgment of bizarreness must carefully consider the context in which a behavior occurs.
2) Persistence of Behavior: The criterion for mental illness requires that a bizarre, antisocial, or disruptive behavior persist over time.
3) Social Deviance: When a person's behavior radically violates expectations and norms.
4) Subjective distress: When the behavior causes the person to be upset by it.
5) Psychological handicap: When a person finds it impossible to be satisfied with life due to psychological problems.
6) Effect on functioning: The extent to which the behaviors in question interfere with a person's ability to live the life that he/she desires.

These"symptoms" all involve judgments on t he part of the mental health professional. So, two questions remain: Are mental health professionals truly able to distinguish between the mentally ill and the mentally healthy? And what are the consequences of mistakes?

Theoretical Propositions:

Rosenhan proposed that one way to test mental health professionals' ability to correctly categorize would be to have normal people seek admittance to psychiatric facilities to see if they would be discovered to be, in reality, psychologically healthy. If these "pseudopatients" behaved in the hospital as they would on the outside, and if they were not discovered to be normal, this would be evidence that diagnoses of the mentally ill are tied more to the situation than to the patient.

Method:

There were eight subjects: one graduate student, three psychologists, one pediatrician, one psychiatrist, one painter, and one homemaker. Each subject was to present themselves for admission to a psychological hospital, in five states across the nation. Each patient complained of hearing voices. Other than this single symptom, they acted completely normal and gave truthful information (except they changed their names and occupations). All the subjects were admitted to the hospitals, and all but one were admitted as schizophrenics.

Once inside, the patients displayed no symptoms and behaved normally. They had no idea when they would be able to leave the hospital. All of the subjects took notes of the experience. They all desired to be released as soon as possible, so they behaved as model patients.

Results:

The average length of the hospital stays was 19 days (ranging from 7 days to 52 days). The key finding was that not one of the pseudopatients was detected by anyone on the hospital staff. When released, they were labeled as "schizophrenia in remission". Although the mental health professionals were easily fooled, the other patients were not fooled. In three of the hospitals, 35 of the 118 real patients suspected they were not actually mentally ill.

Contacts between the patients and staff were minimal. The pseudopatients tried to talk to the staff members, but they would just receive generic answers, and then be ignored. The eight patients were given a total of 2,100 pills, but they did not swallow them. The subjects noticed that many of the real patients secretly flushed their pills down the toilet. In general, the pseudopatients felt that the mental health professionals did not consider the patients to be real people.

Discussion:

Rosenhan's study demonstrated that normal people cannot be distinguished from the mentally ill in a hospital setting. The attitude created is:"If they are here, they must be crazy". Also, when a person is labeled (such as schizophrenic), it becomes his/her central trait. The staff used confirmation bias, and ignored behaviors that refuted their diagnosis, and only focused on behaviors that supported their diagnosis. There was no indication that any of the staff's distortions were done intentionally.

Significance of Findings:

Rosenhan's study shook the mental health profession. The results pointed out two crucial factors. First, it appeared that the "sane" could not be distinguished from the

"insane". Second, it showed the danger in using diagnostic labels. These labels often slanted the way in which the medical professionals viewed patients and their actions.

Criticisms of this Study

Critics of Rosenhan's study indicated that many of diagnoses were based on self-reports that were made to mislead the hospital staff but did not mean that the staff was wrong. The staff had made a correct diagnosis based on the information they had been given. In addition, the fact that the pseudo patient's normal behavior was later not viewed as such by the hospital staff was not an indication of incompetence by the staff but rather showed how it is common in mental hospitals for patients to exhibit a wide variation in their symptoms.

Recent Applications

This study helped further psychiatrist Thomas Szasz's view that mental illness is not a disease but rather a problem with living that has social and environmental causes. He concluded that "crazy talk" by a mental patient does not mean that the person is insane just because the mental health professional cannot comprehend the patient and pointed to Rosenhan's study as evidence of this.

Recent studies have found that people's attitudes towards the mentally ill are changing. A 1999 study presented subjects with a scenario about an employee who behaved in a violent manner towards his boss. The scenarios varied in the amount of stress the employee was said to be under and in some of the scenarios, the employee was described as previously been diagnosed with schizophrenia. Subjects were then asked what most likely caused the violent behavior. To the researchers' surprise, subjects attributed the violent behavior to the stress more than to the schizophrenia. This shows that perhaps tolerance and understanding of mental illness is increasing.

Method:

There were eight subjects: one graduate student, three psychologists, one pediatrician, one psychiatrist, one painter, and one homemaker. Each subject was to present themselves for admission to a psychological hospital, in five states across the nation. Each patient complained of hearing voices. Other than this single symptom, they acted completely normal and gave truthful information (except they changed their names and occupations). All the subjects were admitted to the hospitals, and all but one were admitted as schizophrenics.

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Significance of Findings:

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Study #28

You're Getting Defensive Again!

Freud, Anna
The ego and the mechanisms of defense

Introduction:

Sigmund Freud's theories grew out of careful observations, but did not use a defined scientific methodology and as a result have come under scrutiny from the scientific community. However, Freud's concept of defense mechanisms in which a person's ego protects you unconsciously from thoughts and urges that would otherwise cause you anxiety is still widely held today. His daughter, Anna continued his work in this area by studying defense mechanisms in children.

Theoretical Propositions:

Sigmund Freud's theory on personality stated that a person's personality consists of the id, ego, and superego. The id consists of the basic biological urges like hunger, thirst and sex and wants immediate gratification, which Freud called the pleasure principle. Freud said the id is dark, antisocial and has dangerous sexual urges that if allowed to be expressed would be harmful to you and others. To protect you from the id you have an ego that constantly finds more acceptable ways for your id to gratify itself without upsetting you or others. Your superego (conscience) tells the ego what society says you can and can't do. Your ego constantly tries to satisfy the needs of the id with the demands from the superego.

But what if unacceptable urges from your id made their way to your consciousness? This would be upsetting and cause anxiety. To alleviate this anxiety the ego uses defense mechanisms that use self-deception to prevent the id's forbidden impulses from reaching your consciousness.

Method:

Through years of observation and interactions with patients, Freud and later his daughter, Anna developed the idea of defense mechanisms.

Results & Discussion:

Anna Freud identified 10 defense mechanisms through her work with children. Below are the five most common:

- Repression – The most common defense mechanism in which the ego suppresses unwanted or upsetting thoughts, memories and urges from the id so that they do not reach consciousness. These can reach the surface occasionally through slips of the tongue, dreams or through therapy techniques like free association or hypnosis.
- Regression – Guards against anxiety by causing the person to retreat to a behavior of an earlier stage of development that was less demanding and safer.
- Projection – Projecting one's own upsetting urges, feelings or thoughts onto another person or object.
- Reaction Formation – Engaging in extreme opposite behavior from that of the upsetting urges of the id.
- Sublimation – Finding socially acceptable ways of discharging the energy created by the id's unacceptable urges.

Implications:

Although Anna Freud felt that people with neurotic disorders used most of these defense mechanisms, she admitted that nearly everyone use them to reduce anxiety unconsciously. This is actually considered a healthy behavior in most people because it reduces their anxiety and makes them feel better about themselves. However, if done too often, defense mechanisms can lead to the anxiety coming out in other ways such as disorders.

Critics argue that these defense mechanisms are impossible to scientifically study because they happen in the unconsciousness. Efforts to study this scientifically have been mixed. One interesting study of homophobia, an irrational fear, avoidance, and prejudice toward gay and lesbian individuals, stated that these feelings may be the result of reaction formation to ward off the extreme anxiety caused by their own repressed homosexual tendencies. In this study two groups of males, one homophobic and the other not viewed videos depicting heterosexual, gay, or lesbian sex scenes and while they viewed these videos were monitored for physiological signs of sexual arousal. The non-homophobic group showed no significant arousal when shown homosexual sex acts while the homophobic group showed a significant increase in arousal. Furthermore, when asked to rate their level of arousal, the homophobic group underestimated their degree of arousal to the homosexual videos. This study's results are consistent with Anna Freud's description of reaction formation.

Conclusion:

Through understanding defense mechanisms, your ability to obtain important insights into the causes of people's actions is clearly enhanced but remember that people are using them to avoid unpleasant anxiety so it is probably not a great idea to bring it to his or her attention. Understanding defense mechanisms will also give you insight into your own behavior and how you are unconsciously trying to prevent your id's unpleasant urges from reaching your consciousness.

Study # 29

Learning to be Depressed
Seligman, M.E.P., and Maier, S.F. (1967)
Failure to escape traumatic shock.

Introduction:

If you are like most people, you believe that there are consequences that result from your actions. If you are in an unhappy relationship, you will take necessary steps to change it or end it because you expect to succeed when making these changes.

Most people believe they are personally powerful and able to control what happens to them, at least part of the time, because they have exerted control in the past have been successful. If this perception of power and control is lacking, all that is left is helplessness.

Martin Seligman believes that our perceptions of power and control are learned from experience. If a person's efforts at controlling certain life events fail repeatedly, the person may stop attempting to exercise control altogether. The person may generalize the perception of lack of control to all situations, even when control may actually be possible. This may make a person feel helpless and depressed. Seligman termed this cause of depression as *learned helplessness*.

Theoretical Propositions:

Seligman theorized that there was something in what the animals learn about their ability to control unpleasant stimuli that determined later learning. In other words, if dogs learn from previous experience with electrical shocks that their actions were ineffective in changing the consequence of the shocks, then when in a new situation where they do have the power to escape, they just gave up. They learned to be helpless.

Method:

Subjects for this study were 24 dogs. They were divided into three groups of eight. One group was the "escape group", another the "no-escape group", and the third was the "no-harness group".

The dogs in the escape and no-escape group were restrained by harnesses. On either side of each dog's head was a panel to keep the head facing forward. When an electrical shock was delivered to a dog in the escape group, it could terminate the shock by pressing either panel with its head. For the no-escape group, each dog was paired with dog in the escape group. Identical shocks were delivered to each pair of dogs at the same time, but while the escape group could terminate the shock, the no-escape had no control over the shock. The dogs in the escape group had the power to terminate both sets of

shocks (escape group and no-escape group), while the no-escape group had not power to stop the shocks.

The dogs received 64 shocks at about 90 second intervals. The escape group quickly learned to press the side panels and terminate the shocks. Then, 24 hours later, the dogs were put into a new "shock" situation. They were placed in a small box that separated into two parts by a barrier. There were lights on either side of the box. When the lights were turned off on one side, an electrical current would pass through the floor of the box 10 seconds later. If a dog jumped the barrier within those 10 seconds, it escaped the shock completely. If not, it would continue to feel the shock until it jumped over the barrier.

Learning was measured by the following: 1) how much time it took for the dog to jump the barrier and 2) the percentage of dogs in each group that failed to learn to escape the shocks. Also, the dogs in the no-escape group received 10 additional trials in the shuttle box seven days later to assess the lasting effects of the experimental treatment.

Results:

In the escape group, the time it took for the dogs to press the panel and stop the shock quickly decreased over the 64 shocks. In the no-escape group, panel pressing completely stopped after 30 trials.

The results of the shuttle box showed that it took the no-escape group a much longer time to learn to escape the shock. In fact, over 70% of the no-escape group never learned to jump the barrier to escape the shock, they just stood there and endured the shock.

Discussion:

Seligman and Maier believed that the reason the escape group subjects performed normally in the shuttle box was that they had learned in the harness phase that their behavior was correlated with the termination of the shock. For the no-escape group, they were helpless when they were shocked in the harness, and therefore they had no incentive to try to escape the shock in the shuttle box.

Occasionally, ad dog from the no-escape group made a successful escape in the shuttle box. Following this, however, it reverted to helplessness on the next trial. The dog was not able to correlate it's jumping behavior with the escape from the shock.

Subsequent Research:

Seligman wanted to be able to apply these findings to humans. He asserted that the development of depression in humans involves processes similar to those of learned helplessness in animals. in both situations there is passivity, giving up and "just sitting there", and slowness to learn that a certain behavior is successful. Both the dogs and depressed humans have learned from past experiences that their actions are useless.

Several studies have demonstrated that uncontrollable stressful events can play a role in serious diseases such as cancer. One study found an increased risk of cancer in individuals who in previous years had suffered the loss of a spouse, the loss of a profession, or the loss of prestige (Horne & Picard, 1979). A prominent health psychologist has suggested that being a "good hospital patient" implies that one must be passive and give up all expectations of control. This actually may create a condition of learned helplessness in t he patients whereby they fail to exert control later when control is both possible and desirable for continued recovery. (Taylor, 1979)

Finkelstein and Ramey (1977) conducted a study with infants. One group of infants was able to control the movement of their crib mobile by turning their heads a certain way on their pillows. The other group had no control over the movement of the mobiles. The first group became very good at controlling the mobile's movements. When the second group was give the "special remote control" pillows, they were unable to learn how to control the movements of the mobiles. The infants initially had no control over mobile and movement, and later suffered from learned helplessness and never learned to control the mobiles.

Recent Applications:

A recent study based on Seligman's concepts conducted by the staff at a drug treatment facility found a clear association between learned helplessness and chronic cocaine abuse (Sterling, Gottheil, Winstein, and Lundy, 1996). Those who scored on learned helplessness were less likely to stay in the drug-treatment program and had less successful treatment outcomes.

In a study by Hersh, Stone and Ford (1996), third graders with learning disabilities were compared with third graders without learning problems on a reading task that was above the third grade level. Both groups failed the task, but the students with learning disabilities displayed a significantly more difficult time recovering from the stress of the failure.

Conclusion:

One of the problems with Seligman's study was the concern of ethics: should the dogs have been subjected to the electric shocks? There is an ongoing debate on whether animals should even be used in psychological research, and if so, what should the ethical guidelines be?

From this experiment, Seligman determined that individuals are most likely to become depressed if they have learned to attribute their lack of control to causes that are 1) permanent, 2) related to factors within their own personality, and 3) pervasive across many areas of their lives. By knowing this, therapists and counselors have become better able to understand and treat depression. However, does this knowledge justify the treatment given to the dogs in this study? You decide!

Study # 30

Crowding in the Behavioral Sink

Calhoun, J.B. (1962)
Population density and social pathology.

Introduction:

You probably noticed how your emotions and behavior change when you are in a situation that you perceive as very crowded. You may withdraw; you might look for an escape; or you may find yourself becoming irritable and aggressive. One way behavioral scientists can study the effects of density and crowding on people is to observe places where crowding already exist, such as Manhattan, Mexico City, some housing projects, etc.. The problem with this method is that many other factors can influence behavior, rather than population density. Is it crowding that causes crime, or low income, or drug use?

Another way to study crowding would be to put people into high density conditions for a short time and study their reactions. However, this method is not very realistic.

A third way to study crowding is to use research animals. John B. Calhoun did this in 1962.

Theoretical Propositions:

Calhoun believed that a high population density among rats will severely alter the behavior of the rates. Their may be changes in reproductive and maternal behavior, and produce a higher mortality rate.

Method:

In a series of three studies, either 32 or 56 rats were placed in a 10 x 14 foot laboratory room that was divided into four pens. The rats could move from pen to pen in a very specific fashion. You could move from pen 1 to pen 2, from pen 2 to pen 3, and from pen 3 to pen 4. You could not get from pen 4 to pen 1. So there was one door in pens 1 and 4, and two doors in pens 2 and 3. The rats were supplied with plenty of food, water, and materials for building nests. There was viewing window in the ceiling of the room to observe the rats.

The observation room was a size to accommodate 12 rats per pen, or a total of 48 rats. After the groups were placed in the room, they were allowed to multiply until this normal density was nearly doubled to 80. Once the population reached 80, newly born rats were removed so the population remained at 80. The rats were left here for 16 months.

Results:

When the male rats reached maturity, they began to fight with each other for social status as they do naturally. Only one male rat ended up in charge of pen 1 and 4. The females distributed themselves equally throughout the pens, so each male rat in pen 1 and 4 had a harem of 8 to 12 female rats. The male rats in pens 1 and 4 did not take any chances. In order to prevent infiltration, the males started to sleep at the door so they were always on guard.

On occasion, there were a few other male rats in the pens 1 and 4, but they were extremely submissive. The females functioned well as mothers. About half the infant rats in pens 1 and 4 survived to adulthood.

However, the rest of the 60 or so rats crowded into the middle two pens, pens 2 and 3. These rats were crowded and came in contact with each other frequently. The kinds of behaviors observed among the rats in pens 2 and 3 demonstrates a phenomenon that Calhoun termed the "behavioral sink". A behavioral sink is the "outcome of any behavioral process that collects animals together in unusually great numbers". A behavioral sink acts to aggravate all forms of pathology that can be found within a group. Here are some of the pathologies:

1. *Aggression:* the males had to fight more frequently in order to maintain dominance. They would also exhibit signs of pathology: going berserk, attacking females and juveniles, biting other rats on the tail.

2. *Submissiveness:* There were other groups of male rats who ignored and avoided battles for dominance. They were fat and their fur was full. They moved through the pen as if asleep, ignoring others, and were, in turn, ignored by the rest.

3. *Sexual Deviance:* Another group of rats engaged in extreme activity and were always on the prowl. They were termed "probers". They were hypersexual, and even cannibalistic. They did not follow the normal mating ritual. They would not wait for the female, but follow her right into her burrow.

4. *Reproductive abnormalities:* The females in the behavioral sink gradually lost their ability (or inclination) to build adequate nests for their young. The mother rats also lost their maternal ability to transport their young from one place to another if they felt the presence of danger. The infants were frequently dropped and abandoned, left to die. They were then eaten by the adults. The infant mortality rates in the more crowded pens ranged from 80 to 96 percent. Also, the females in heat in the more crowded pens, were chased by large groups of males until they were finally unable to escape. These females experienced complications in pregnancy and delivery. By the end of the study, almost half of them had died.

Discussion:

Calhoun concluded that the natural social and survival behaviors of the rats were severely altered by the stresses associated with living in a high-population density environment. Also, he believed that with additional research, his study might contribute to our understanding of similar issues facing human beings.

Significance of Findings:

McCain, Cox and Paulus (1980) found that in crowded prisons versus less crowded prisons, there were significantly higher rates of mortality, homicide, suicide, illness, and disciplinary problems.

Crowding also seems to produce negative effects on problem solving abilities. One study placed people in small, extremely crowded rooms, or in larger, less crowded rooms. People in the crowded rooms performed significantly worse on a complex task than those in that were not crowded (Evans, 1979).

Research has determined that your blood pressure and heart rate increase in crowded conditions. You also tend to feel more hostile, and that time seems to pass more slowly as density increases (Evans, 1979).

Criticisms:

You must always be careful when applying animal research to humans. Research done with animals cannot necessarily be generalized to human beings.

Recent Applications:

Brown and Grunberg (1996) found that crowded rats ate less food, but drank more water than individually housed rats during an 18 hour period.

In a cross-cultural study conducted in Iran, researchers discovered that women living in single-family housing units have significantly higher actual and desired fertility rates than women living in multi-family housing units, regardless of their social, economic, and demographic differences (Paydarfar, 1996). Paydarfar theorizes that there is a population effect that serves to reduce fertility when density reaches very high levels. So as single family units are being torn down and replaced with multi-family units, the population density that is created will activate biological forces that will reduce fertility, and actually offset some of the negative effects of overcrowding.

Psychotherapy

Study # 31: Choosing Your Psychotherapist
Study # 32: Relaxing Your Fears Away
Study # 33: Projections of Who You Are
Study # 34: Picture This!

Study # 31 *Choosing Your Psychotherapist*

Smith, Mary Lee, and Glass, Gene V (1977)
Meta-analysis of psychotherapy outcome studies.

Psychotherapy means therapy for psychological problems. Most people treated by psychotherapists are not mentally ill, but just having problems in their life. Behavioral therapies focus on specific behaviors that make you unhappy, and help you change them using specific behavioral methods. There are other kinds of therapies known as "client-centered", "rational emotive", and "psychodynamic" therapies that help you gain insight into your behavior.

The real questions are: 1) Does psychotherapy really work, and 2) which method works the best? Mary Lee Smith and Gene Class (University of Colorado, 1977) undertook the task of compiling all of the studies on psychotherapy effectiveness and analyzed them. Then they used "meta-analysis" to determine the overall effectiveness of the different psychotherapies. A meta-analysis take the results of many individual studies and integrates them into a larger statistical analysis so that the evidence is combined into a meaningful whole.

Theoretical Propositions

The goal of Smith and Glass's study were the following:

1. to identify and collect all studies that tested the effects of counseling and psychotherapy
2. to determine the magnitude of the effect of therapy in each study, and
3. to compare the effects of different types of therapy

The theoretical proposition implicit in these goals was that when this meta-analysis is done, psychotherapy would be shown to be effective, and differences ineffectiveness of the various methods, if any, could be demonstrated.

Method

Smith and Glass selected 500 studies. Of these, 375 were fully analyzed. All the studies examined at least one group that received psychotherapy compared with another group the received a different form of therapy or no therapy at all (the control group). To measure the magnitude of the therapy, the study had to provide a measurement of the effectiveness. Examples are: increases in self-esteem, reductions in anxiety, improvements in schoolwork, etc.

The average age of the subjects in therapy was 22 years. They had received an average of 17 hours of therapy from therapists with an average of 3 ½ years of experience.

A total of six researchers analyzed and coded the information. The six researchers took great care to practice their coding together to insure consistency in coding and scoring.

Results

First, the average client receiving therapy was better off than 75% of the untreated controls.

Second, any type of therapy is more effective than no treatment.

Third, there seems to be a negligible difference between the different type of psychotherapy.

Fourth, the researchers divided all of the therapies into two major classes: behavioral and non-behavioral. Both therapies are just as effective when compared to people who received not therapy at all.

Discussion

Psychotherapy appears to be successful in treating various kinds of problems. It seems people are better off with therapy, than without it. Also, one type of therapy does not seem to be superior to another type of therapy. Finally, the authors believe that concrete information about psychotherapy effectiveness is not concrete because it has been spread too thinly across a multitude of publications.

Implications and Subsequent Research

Smith and Glass study undermined the beliefs of many psychotherapists. A behavioral therapist truly believes behavioral therapy is most effective, and this study showed that most therapies are equally effective. This study caused many therapists to take a more eclectic approach (incorporate many types of therapies, not restrict self to one type of therapy). However, some therapies are better for certain problems. Behavioral therapies are better for phobias.

The most important thing is what the expectations of the patient are of the therapist. If you believe therapy will help, your chances of being successful are greatly increased. If you see your therapist as genuine, caring, warm and empathetic, you are much more likely to experience rewarding therapy.

Strupp and Hadley (1979) supported the finding that some therapy is more effective than no therapy. Students whose therapists helped them to discuss their

problems, focused on the present rather than the past, and encouraged them to become involved in social activities reported the most favorable therapy.

Recent Applications

Smith and Glass study is important for two reasons: 1) some therapy is more effective than not therapy, and 2) the use of meta-analysis in their study.

Gould and Clum (1993) found that self-help programs can be very effective, sometimes more effective than a therapist. Durlak and Lipsey (1991) used meta-analysis to answer questions about the effectiveness of various community intervention programs.

Smith and Glass's study was a milestone because it focused on how best to help those in psychological pain. They were not concerned with what is the best therapy, but rather the effectiveness of therapy.

Study # 32

Relaxing Your Fears Away

Wolpe, J.
The systematic desensitization treatment of neuroses

Introduction:

This study examines systematic desensitization or the process of decreasing your anxiety level or fear very gently and gradually usually through visualization. This method of treatment is generally used for anxiety disorders, specifically, phobias (irrational fear of something). Early treatments of phobias focused on Freud's psychoanalysis and maintained that the phobia was the result of some unconscious conflict rooted in a childhood trauma. In accordance with this view, psychoanalysis tried to treat phobic patients by helping them gain insight into their fear by discussing the source of their problem. Later, Joseph Wolpe perfected the behavioral treatment for phobias that he called systematic desensitization. He did not believe phobias were a result of unconscious sources but instead stated that they are learned behaviors that can be unlearned through therapy.

Theoretical Propositions:

Wolpe and other researchers discovered that fear reactions could be reduced by a simple conditioning procedure where the animal is fed something it likes each time it is presented with the object it fears. Since the fear response and the feeding response are incompatible, the fear gradually was reduced. Wolpe surmised that this type of training could be done in humans too. In his work with humans, Wolpe used deep relaxation in place of feeding with the idea being that you can't be scared of something and completely relaxed at the same time. Wolpe's research reported on 39 cases randomly selected out of 150, where the subjects' phobias were treated using this method.

Method:

To help people overcome their phobia using systematic desensitization, Wolpe used the following methods:

- Relaxation Training – Therapist teaches the patient how to relax their body through progressive muscle relaxation. This is a process that involves tensing and relaxing various muscle groups throughout the body until a deep relaxation is achieved.
- Construction of an Anxiety Hierarchy – With the help of a therapist, the patient constructs a list of anxiety-producing situations or scenes that increase in their level of fear as they get closer to the actual thing the person has a phobia about.
- Desensitization – Patient places him/herself in complete relaxation and imagines the first step of their anxiety hierarchy continuing on to the next step until they can picture the item they are most scared of while remaining completely relaxed. (See example below)

CLAUSTROPHOBIA

1. Reading of miners trapped.
2. Having polish on fingernails without access to remover.
3. Being told of someone in jail.
4. Visiting and unable to leave.
5. Having a tight ring on finger.
6. On a journey by train (the longer the journey, the more the anxiety).
7. Traveling in an elevator with an operator (the longer the ride, the more the anxiety).
8. Traveling alone in an elevator.
9. Passing through a tunnel on a train (the longer the tunnel, the greater the anxiety).
10. Being locked in a room (the smaller the room and the longer the duration, the greater the anxiety).
11. Being stuck in an elevator (the greater the time, the greater the anxiety).

Results:

In the 39 cases that Wolpe's article researched the patients rated their treatment as completely or partially successful in 91% of the cases. Wolpe pointed to this as success but his critics stated that he was only treating the symptoms and not trying to get at the causes of the phobia and that as a result one could expect the phobias to come back. Wolpe responded by obtaining follow-up reports from patients who said the treatment was successful. These reports taken from 6 months to 4 years later showed no instance of relapse or new phobias.

Recent Applications:

Current research in this area continues to show similar success rates in using systematic desensitization to treat phobias and the idea is becoming more widely known to the general public.

Study # 33

Projections Of Who You Are

Rorschach, H. (1942)
Psychodiagnostics: A diagnostic test based on perception.

Introduction:

Do you ever lay in the grass on a hot summer day and look at the clouds, and perceive shapes in them? If you do, you are projecting something about yourself onto the shapes in the sky. This is the concept underlying Rorschach's development of the inkblot test. This was one of the earliest versions of a type of psychological tool known as the projective technique.

The two most widely used projective techniques are the Rorschach inkblot test and the Thematic Apperception Test (TAT). Rorschach's test involves direct comparisons among various groups of mental illnesses and is often associated with the diagnosis of psychological disorders.

Rorschach believed that his test could serve two main purposes. One was that it could be used as a research tool to reveal unconscious aspects of personality. The other purpose, claimed somewhat later by Rorschach, was that the test could be used to diagnose various types of psychopathology.

Theoretical Propositions:

The theory was that in the course of interpreting the random inkblot, attention would be drawn away from the subject so that the person's usual psychological defenses would be weakened. This, in turn, would allow normally hidden aspects of the psyche to be revealed.

Method:

Development of the Test: A few large inkblots are thrown on a piece of paper, the paper is folded, and the ink spread between the two halves of the sheet. However, the only designs that were used had to conform to the following criteria: 1) they must be relatively simple 2) symmetrical and 3) moderately suggestive of real objects. He ended up with ten forms; five in black and white, two used black and red, and three were multi-colored.

Administration and Scoring: The subject looks at each blot and is asked what it might be. Rorschach listed the following guidelines for scoring the subjects' responses to the ten inkblots:

1) How many responses were made? What was the reaction time? How often did a subject refuse to interpret a figure?
2) Was the subject's interpretation determined by both the shape and color?
3) Was the figure seen as a whole, or in separate parts?
4) What did the subject see?

Rorschach considered the *what* the subject saw in the figure as the least important factor in scoring.

Results:

To discover how various groups of people might perform differently on the inkblot test, Rorschach and his associates administered it to subjects from several different psychological groups. These included, but were not limited to, normal individuals, schizophrenic patients, and individuals diagnosed with bipolar disorder.

Rorschach found that subjects generally gave between 15 and 30 total responses to the ten figures. Depressed subjects generally gave fewer answers; happy subjects gave more; among the schizophrenics, the number of answers varied from person to person. The test took between 20 and 30 minutes to complete. Normal subjects usually responded to all of the blots, but schizophrenics would frequently refuse to answer.

Rorschach believed that how much of the blot, and how color is interpreted is also a reflection on the subject's personality. Using the entire blot is said to indicated conceptual thinking, whereas, the use of small details suggest compulsive rigidity. A frequent use of white space is supposed to be a sign of negativism. Responses that are dominated by color suggest emotionality and impulsivity.

Finally, what the subject actually sees in the inkblot is important. The most common category of responses involved animals and insects. Original responses (responses that occurred fewer than once in 100 tests) were found most often among schizophrenics and least often among normal patients.

Discussion:

The discovery that the inkblot test could be used as a diagnostic tool was accidental. Rorschach claimed that his test was often able to indicate schizophrenic tendencies, hidden neuroses, potential for depression, characteristics of introversion vs. extroversion, and intelligence. He believed his test should not be a substitute for other diagnostic techniques, but rather supplement them.

Criticisms and Subsequent Research:

One of the most important criticisms asks whether the inkblot test actually measures what it is supposed to measure - underlying personality characteristics. Research demonstrated that many of the response differences on the test can be explained by such things as verbal ability, age of the subject, intellectual level, and amount of education.

Another criticism is that since the test is so subjective, it cannot be supported by scientific investigation. Nevertheless, the test remains in common use among psychologists . It is not necessarily used a s diagnostic tool, but rather as a means of increasing a therapist's understanding of individual clients.

Recent Applications:

Weiner (1997), concluded that the Rorschach test does what it claimed it could do. Peters and Nunno (1996) also found that the Rorschach can differentiate between psychological disorders such as borderline personality disorder and schizophrenia. However, Aronow, Reznikoff, and Moreland (1995) believe that the test may be useful as a projective tool, but does not really measure anything about a person's psychological state.

Donahue and Tuber (1993) found that homeless children who were better able to produce adaptive fantasy images to the Rorschach stimuli appeared better able to withstand the severe psychological and environmental stress of being homeless.

Study #34

Picture This!

Murray, H.A. (1938)
Explorations in personality.

Introduction:

Henry A. Murray, at the Harvard Psychological Clinic, and his assistant, Christiana D. Morgan, developed a very different form of a projective test called the Thematic Apperception Test, or TAT, which focused entirely on the content of the subjects' interpretations. Rather than formless shapes like Rorschach's inkblots, the TAT consists of black-and-white drawings depicting people in various ambiguous situations. The client or subject is asked to make up a story about the drawing. The stories are then analyzed by the therapist or researcher to reveal hidden unconscious conflicts.

Theoretical Propositions:

The theory underlying the TAT is that people's behaviors are driven by unconscious forces. Implicit in this notion is an acceptance of the principles of psychodynamic psychology developed originally by Freud. In this view, unconscious conflicts must be exposed for accurate diagnosis and successful treatment of psychological problem to take place.

Method:

Each picture involved at least one person with whom the subject could easily identify. Then the subject is asked to look at the picture and make up a story about the picture. These were the exact instructions given to each subject:

This is a test of your creative imagination. I shall show you a picture and I want you to make up a plot or story for which it might be used as an illustration. What is the relation of the individuals in the picture? What has happened to them? What are their present thoughts and feelings? What will be the outcome? Do your very best. Since I am asking you to indulge your literary imagination, you may make your story as long and as detailed as you wish.

The subjects were given one hour to write a story about 20 different pictures. They usually completed 15 in the one-hour time frame. A few days later the subjects returned and were interviewed about their stories. Subjects were asked to explain what their sources for the stories were. They were also given a free-association test, in which they were to say the first thing that came to mind in response to words spoken by the experimenter. These exercises were designed to determine to what extent the stories the

subjects made up about the drawings reflected their own personal experiences, conflicts, desires, etc..

Results and Discussion:

Murray and Morgan reported two main findings:

1) The stories the subjects made up for the pictures came from four sources: a) books and movies b) real-life events involving a friend/relative c) experiences in the subject's own live, and d) the subject's conscious or unconscious fantasies

2) The subjects clearly projected their own personal, emotional, and psychological existence into their stories.

Murray reports that, without exception, every person who participated in the study injected aspects of their personalities into their stories.

Criticisms and Related Research:

The TAT has been criticized of poor reliability and validity. The most serous reliability problem for the TAT is that different clinicians offer differing interpretations of the same set of TAT responses. Some have suggested that therapists may unknowingly inject their own unconscious characteristics onto the subject's descriptions of the drawings.

If the test is valid, then it should be able to distinguish between normal people and people who are mentally ill, or between different types of psychological conditions. However, research has shown that it fails to make such distinctions.

Other research has questioned the ability of the TAT to predict behavior. If a person writes a story laden with aggression, it does not mean that the person will someday perform a very aggressive act.

Another criticism of the TAT relates to whether the projective hypothesis itself is valid. There is scientific evidence to suggest that responses to projective tests such as the Rorschach and TAT may depend upon temporary and situational factors. So, your story for the TAT on Monday, may be different than the story you would write on Friday, if your days were significantly different.

As a demonstration of this criticism, numerous studies have found variations in TAT performance relating to the following list of influences: hunger, lack of sleep, drug use, anxiety level, frustration, verbal ability, characteristics of the person administering the test, the attitude of the subject about the testing situation, and the subject's cognitive abilities.

Recent Applications:

A fascinating study from earlier in 1990 attempted to relate personality factors in childhood with a person's health status as an adult and total lifespan (Friedman, tucker, Tomlinson-Keasey, Schwartz, and Wingard, 1993). Using data from a 20-year longitudinal investigation conducted in the 1920s and 1930s that included TAT assessments, the researchers claim to have found evidence that childhood personality is related to survival decades into the future and points to pathways linking personality to health.

Brandstetter (1997) found that people who start their own businesses or who are interested in doing so were more emotionally stable, independent, and self-assertive than a comparison group of business owners who had assumed ownership of their businesses from relatives.

Conclusions:

Despite all of the criticisms of the TAT, it is to this day among the most frequently used psychological tests. In therapy, it is not necessarily used as a test of measurement, but rather as an extension of the usual interview.

Social Psychology

Study # 35: Not Practicing What You Preach
Study # 36: The Power of Conformity
Study # 37: To Help Or Not To Help
Study # 38: Obey At Any Cost?

Study # 35

Not Practicing What You Preach

LaPiere, R.T. (1934)
Attitudes and actions.

Introduction:

This was a study about "social attitudes": the attitudes you hold about other people or groups of people. In the early years of psychology, it was common for psychologists to measure attitudes through the use of questionnaires, and then assume that the measured attitude would be reflected in future behavior when the attitude object is actually encountered. LaPiere argued that the assumption researchers were making of direct correspondence between symbolic behavior (answers on questionnaires) and real behavior was far too simple, unwarranted, and probably wrong. In the 1930s, there was a great deal of racial and ethnic prejudice and discrimination in American society. LaPiere decided to capitalize on such discriminatory policies to test his idea that spoken attitudes are often poor predictors of actual behavior.

Theoretical Propositions:

The theory implied in LaPiere's study was that, contrary to prevailing beliefs, people's "social actions" track very poorly with their spoken social attitudes. In other words, what people say is often not what they do.

Method:

This study was conducted in two parts. The first part focused on real behavior, while the second part assessed symbolic behavior.

Real Behavior Phase: LaPiere traveled with a young Chinese couple twice across the United States as well as up and down the full length of the Pacific Coast. The Chinese thought that LaPiere was just a traveling companion; they did not know that he was observing American's attitudes toward the Chinese couple. The three of them approached 67 hotels, and ate at 184 restaurants. LaPiere kept accurate records of responses by hotel clerks, bellboys, elevator operators and waitresses. LaPiere often let the Chinese couple secure the room while he took care of the luggage, so that his presence would not affect the hotels/restaurants attitudes.

Symbolic Behavior Phase: LaPiere mailed questionnaires to all establishments they visited six months after the visit. The main question on the questionnaire was "Will you accept members of the Chinese race as guests of your establishment?" Eighty-one

restaurants and 47 hotels responded to the questionnaires. LaPiere also obtained responses to the questionnaire from 32 hotels and 96 restaurants that they did **not** visit.

Results:

LaPiere reported that of the 251 hotels and restaurants they visited, only one denied them service because of the ethnicity of his companions. Other than this one instance, LaPiere felt they received very good service from the many establishments.

However, the results of the questionnaires did not reflect this attitude. About 90% of the establishments visited replied that they would not serve Chinses individuals! These were similar to the responses from the establishments that LaPiere questioned that they had not visited.

Discussion:

LaPiere's discussion of his findings focused on the lack of validity of questionnaires in determining a person's true attitude. He pointed out that if a Chinese person was were to consult the findings of the questionnaire prior to taking a tour of the U.S., he may as well cancel the tour, when in reality, he would probably receive excellent service.

LaPiere believe that questionnaires can accurately assess attitudes, but do not assess "real behaviors". Frequently, we do not act as we truly believe.

Criticisms, Subsequent Research, and Recent Applications:

LaPiere's methods were criticized on the basis that a simple yes/no answer to a question is not a valid measurement of a person's attitudes regarding a specific group of people. Also, six months later, there is a chance that the person responding to the letter is not the same person that serviced the couple.

Forty years later, Wicker (1969) reviewed the study and also concluded that the correlation between measured attitudes and actual behavior was indeed weak, perhaps non-existent. There are a few reasons why the inconsistencies between attitude and behavior exist. One, you have many attitudes that compete with each other. You may be prejudice, but you also think it is wrong to be rude. Second, there are times that you might behave contrary to your attitude because you have no alternative. Third, social pressures and the human desire to avoid embarrassment can exert strong influences on behavior. Finally, "force of habit" may weaken the connection between attitude and behavior. You know smoking is unhealthy but you continue the habit.

Taylor, Peplau, and Sears (1997) identified that factors that produce greater consistency between attitudes and behavior:

1. *Strength of attitude*: the stronger the attitude, the more likely you are to act accordingly.
2. *Stability of attitude*: attitudes that are stable over time are better at predicting behavior
3. *Relevance of attitude to the behavior*: attitudes will predict behavior much better if the attitude measured relates as exactly as possible to the behavior of interest. The attitude of believing in God does not necessarily predict church attendance. However, if someone has the attitude that attending church is important in displaying belief in God, he is more likely to attend church.
4. *Salience of attitude*: If an attitude is salient (important, personal), it is more likely to predict behavior. If a friend has recently been given a blood transfusion, your attitude about donating blood is probably more salient. You are more likely to give blood under these circumstances, even if your attitude about donating blood has not changed.
5. *Situational Pressures*: Sometimes external pressures are so strong that your internal attitude has little effect on your behavior. There is a new stop sign, and you usually do a "rolling stop". However, there is a police car on the corner today, so you make a full stop, even if you don't think it is necessary.

Lober (1995) determined that the gap between people's attitudes toward recycling and resource conservations tends to be large. People express strong beliefs that environmentally conscious behaviors are important; yet in their personal lives tend to fail to practice those behaviors. Findings suggest that levels of the individual environmental behaviors will remain low unless an environmental issue is linked to immediate personal concerns.

Study # 36

The Power of Conformity

Asch, S.E. (1955)
Opinions and social pressure.

Introduction:

When psychologists talk about conformity, they refer to an individual's behavior that adheres to the behavior patterns of a particular group of which that individual is a member. The usually unspoken rules or guidelines for behavior in a group are called "social norms". If you think about it, you can probably remember a time in your life when you behaved in ways that were out of sync or in disagreement with your attitudes, beliefs, or morals. Chances are you were in a group in which everyone was behaving that way, so you went along with them. This indicates that sometimes conformity is a powerful force on our behavior and can even at times make us do things that conflict with our attitudes, ethics, and morals.

Theoretical Propositions:

Asch wanted to find out just how powerful the need to conform is in influencing our behavior. Asch chose to focus on an obvious form of conformity: perceptual conformity. By examining conforming behavior on a simple visual comparison task, he was able to study this phenomenon in a controlled laboratory environment.

Asch theorized that if conformity is such a powerful force, then researchers should be able to manipulate a person's behavior by applying group pressure to conform.

Method:

The visual materials consisted of pairs of cards with three different lengths of vertical lines (comparison cards) on one and single standard line the same length as one of the three comparison lines on the other (see below).

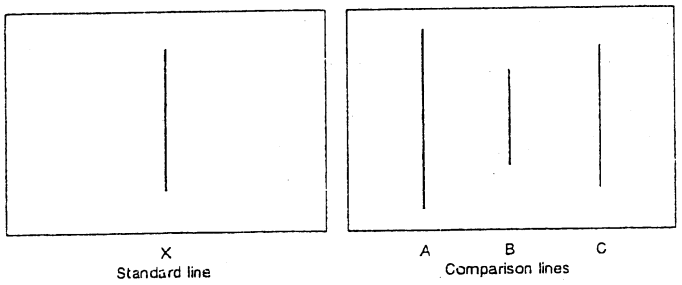

FIGURE 1 An example similar to Asch's line judging task cards. (adapted from p. 32)

This is how the method worked: let's ay you report to the experiment room and find seven other subjects already seated in a row (the other "subjects" are really confederates, they are a part of the experiment). You sit in the empty chair at the end of the row. The experimenter shows the group the two cards, and asks all of you to choose the line on the comparison card that is the same length as the standard line. Starting at the far end of the row away from you, each subject is asked individually for his/her answer. Everyone gives the correct answer, including you. The card is changed, and the same process occurs again. On the next trial, things change. The card is revealed and you immediately choose in your mind the correct response. But now, all of the other "subjects" choose the same wrong line. Now it's your turn to respond. You think they have gone blind! What do you do – maintain your opinion or conform to the rest?

Results:

Each subject participated in the experimental situation several times. Approximately 75% of them went along with the group's consensus at least once. Considering all trials combined, subjects agreed with the group on the incorrect responses about one-third of the time.

Discussion and Related Research:

The powerful effects of group pressures to conform were clearly demonstrated in Asch's study. If individuals are willing to conform to a group of people they hardly know about a clearly incorrect judgment, how strong must this influence be in real life? Asch's results were extremely important in two ways:

1. The real power of the social pressure to conform was demonstrated scientifically
2. This research sparked a huge wave of additional studies

Here are some of the findings of more recent research:

1. Social support: If one other person does not conform to the group, you are less likely to conform.
2. Attraction and commitment to the group: If you like the group and want to belong to the group, you are more likely to conform. If you do not care about the group, you are less likely to conform.
3. Size of the group: conformity is greatest in a group of six or seven. Less than this, there is not enough conformity to influence you, and more then seven, and you start to suspect a conspiracy.
4. Sex: Women seemed to be more willing to conform then men. However, more recent studies are starting to refute this result.

Criticisms:

Researchers question whether Asch's results can be generalized to the real world. Maybe the subjects were willing to go along with the group on something so trivial and unimportant as the length of a line, but in real life they would not conform so readily. It must be pointed out, however, that while real-life matters of conformity can certainly be more meaningful, it is equally likely that the pressures for conformity from groups in the real world are also proportionately stronger.

Recent Applications:

Prilleltensky (1990) contended that psychology can contribute to the advent of social change toward a 'good' society; people assume the current society is the best one, and by proposing strategies to counteract this line of thought, society can change for the better.

Bond and Smith (1996) found that conformity has declined significantly since the early 1950s. Also, conformity in collectivist cultures (Japan, India) is higher than conformity in individualistic cultures (United States).

Study #37

To Help Or Not To Help

Darley, J.M. & Latane, B.
Bystander intervention in emergencies. Diffusion of Responsibility.

Introduction:

One of the most influential events in the history of psychology was not a discovery or research result but a tragic event in New York City. In 1964, Kitty Genovese was returning to her apartment in a quiet middle-class neighborhood in Queens. As she left her car and walked toward her building, a man viciously attacked her with a knife. As the man stabbed her several times, she screamed for help. One neighbor yelled out his window for the man to "leave that girl along," at which time the attacker began to walk away. But then he returned and began stabbing Genovese again. She continued to scream until finally someone telephoned the police. The police arrived within two minutes of the call but Genovese was already dead and the attacker was gone. The attack had lasted 35 minutes. During police investigations, it was found that 38 people in the surrounding apartments witnessed the attack but only one had eventually called the police. If someone had acted sooner, Genovese probably would have survived. This led the nation to wonder why so many people could have witnessed such an event and failed to act to try to stop it. This led social psychologists to examine the idea of helping behavior (prosocial behavior) and the behavior of helping others in emergency situations (bystander intervention). Darley and Latane theorized that the large number of people witnessing a violent event will *decrease* the willingness of individuals to step in and help. They decided to test this experimentally.

Theoretical Propositions:

Darley and Latane believe that the reason no one took steps to help Kitty Genovese was a phenomenon called diffusion of responsibility. This is when bystanders in an emergency situation believe, "someone else will help, so I don't need to." In situations where there are not any other bystanders, people will be more likely to help. Darley and Latane set out to recreate situations to test this in an experiment.

Method:

In their experiment, Darley and Latane told students in an introductory psychology course at New York University that they were interested in studying how students adjust to university life in a highly competitive, urban environment. The students were asked to discuss the kinds of personal problems they were experiencing but to avoid embarrassment would be in separate rooms speaking to each other over an intercom system. This intercom would only allow one speaker at a time. Each student would be given two minutes of "air time" before the microphone switched to the next student. This was all a cover story to obtain natural behavior from the subjects.

The students were divided into three different experimental conditions. Group 1 believed they would be talking with only one other person. Group 2 believed there would be two other people on the intercom. Group 3 believed that there were five other people on the line. In reality, all the subjects were alone and the other voices were on tape.

To create an emergency, the researches decided that a very realistically acted epileptic seizure would be interpreted by most people as an emergency. They taped a person explaining that they sometimes have severe seizures and then later as they talked had them stutter that they needed help and thought they were having a seizure. Darley and Latane then measured the percentage of subjects in each condition who helped the student in trouble. For this experiment helping was defined as leaving the cubicle and notifying the experimenter of the problem. They also measured

the amount of time it took subjects to respond to the emergency and try to help. Subjects were given four minutes to respond after which the experiment was terminated.

Results:

The results supported their theory. As subjects believed there were a greater number of others present, the percentage that reported the seizure quickly, that is, as the attack was occurring, decreased dramatically (See chart below). For those who eventually helped, the amount of delay in helping was greater when more bystanders were present. For Group 1, the average delay in responding was less than one minute. For Group 3, the average delay was over three minutes. Finally, the total number of subjects who reported the seizure at all, either during or after it occurred varied among the groups in a similar way. All of the subjects in Group 1 reported the emergency, but only 85% of Group 2 and 60% of Group 3 did so at any time during the four-minute period.

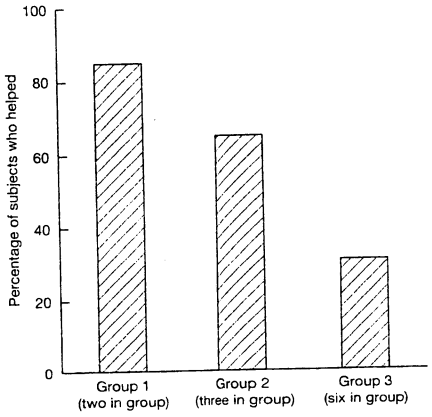

FIGURE 1 Number of subjects in each condition who helped quickly *during* seizure. (Adapted from data on p. 380.)

Discussion:

Darley and Latane were quick to point out that this lack of action was not due to uncaring attitudes because all of the subjects reported experiencing a great deal of anxiety and discomfort during the perceived seizure. They concluded that the reason for their results was that social influence or the number of people present effected the reasoning of the person. As the number of other people present increased so did the assumption that someone else would handle the emergency. The responsibility and guilt of not helping was diffused over other people thought to be present. Another reason for not helping was what they termed evaluation apprehension or the fear that by helping we will be embarrassed or ridiculed. The fear of being wrong and looking like fool prevents us from acting.

Significance of the Findings:

After their research in this area, Darley and Latane proposed the following 5-step model that they believe most people go through before intervening in an emergency:

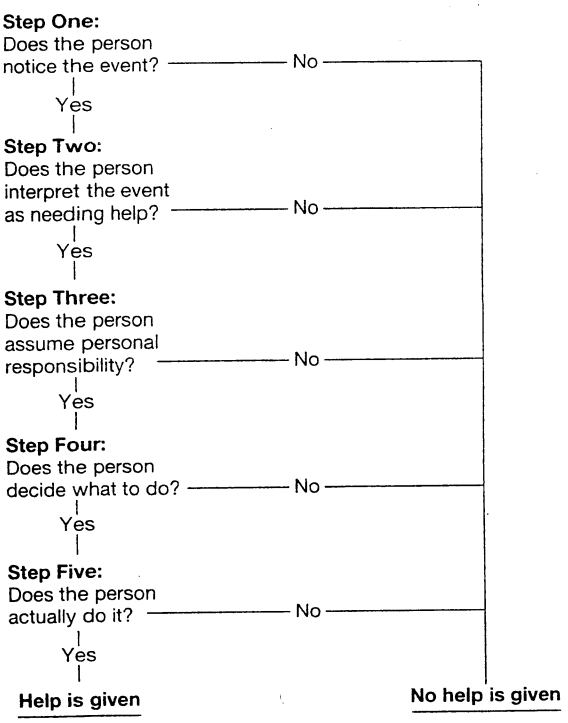

FIGURE 2 Latané and Darley's model of helping.

Subsequent Findings & Recent Applications:

In a later experiment, Latane and Darley tested whether groups of people in close contact with each other would make them less likely to help or act. They tested this by having subjects fill out a questionnaire together. While filling out the questionnaire smoke began to be pumped into the room from under the door. The researchers timed the subjects to see how long they would wait to report the smoke. Group 1 who had one person working alone reported the smoke within the first two minutes 55% of the time. Only 12% of subjects in Group 2 that had two confederates (people in on the experiment instructed to ignore the smoke) and Group 3, which had three confederates with the subject, reported the smoke in the two minutes.

Conclusions:

While these results can seem pessimistic, one should realize that these studies deal with extremely specific situations in which people fail to help. Frequent examples may be found every day of people helping other people. It is hoped by the researchers that by understanding where this behavior comes from that people can be work to prevent it from happening in the future. Never assume that others have intervened or will intervene in an emergency. *Always act as if you are the only person there.*

Study # 38 ***Obey at any Cost***

Milgram, S. (1963)
Behavioral study of obedience

If someone in a position of authority ordered you to deliver an electric shock of 350 volts to another person because the other person answered a question incorrectly, would you obey? If you met someone who was willing to do such a thing, you would probably think of him as cruel and sadistic. This study by Stanley Milgram of Yale University set out to examine the idea of obedience and produced some shocking and disturbing findings. His experiment has is still referred to in discussions of obedience, but it has also been highly influential in issues of ethics of using human subjects in psychological research.

Milgram performed this experiment so he could see why people would carry out great harm to others simply because they were ordered to (Nazi Germany, WWII). So Milgram created an experiment that would cause a person to order another to injure a third person, without anyone actually getting hurt.

Theoretical Propositions

Milgram's main proposition was that humans have a tendency to obey others in a position of authority over them, even if it violates their own codes of ethical behavior. Humans will inflict pain on a third person if ordered to do so by a person in a more powerful position.

Method

Milgram designed a scary looking shock generator. It had 30 toggle switches labeled with increasing voltage levels, starting with 30 volts and increasing by 15 to 450 volts. The switches were labeled as "slight shock", "moderate shock", and "danger: severe shock". This was not a real shock generator, it actually administered no shocks.

The subjects were 40 males between the ages of 20 and 50. Each subject was paid $4.50 (1963). The payment was simply for coming to the laboratory, not if they stayed for the entire experiment. There were two other key participants: a confederate (a person who is "in" on the experiment) pretending to be a subject, and an "actor" playing the part of the experimenter.

Each of the participants was told that this experiment was to study the effect of punishment on learning. Then the subject became the questioner and the "subject" (confederate) became the learner.

The confederate was taken into the next room and was strapped to a chair and wired with electrodes. The confederate was able to reach four buttons labeled a, b, c and d.

The subject now proceeded to ask 30 questions of increasing difficulty. If the confederate answered correctly, the subject continued to the next question. If the confederate answered incorrectly, the subject was to administer an electric shock. Because the confederate was "in" on the experiment, he knew all of the questions, and knew which ones he would answer incorrectly on purpose. As stated earlier, the shock generator was fake, and no shocks were actually administered. However, the confederate pretended to be shocked and would scream, etc.

Most of the subjects would turn to the experimenter at some point for guidance on whether to continue the shocks. When this happened, the experimenter ordered the subject to continue, in a series of commands increasing in severity as more prodding was necessary:

Command 1: please continue
Command 2: the experiment requires that you continue
Command 3: It is absolutely essential that you continue
Command 4: You have no other choice, you must go on.

The level of obedience was measured by the level of the shock at which each subject refused to continue. There were 30 switches, so a scale from 0 to 30 was used.

Results

Upon command of the experimenter, every subject continued to at least the 300-volt level, which was when the confederate banged on the wall to be let out and stopped answering. Twenty-six of the 40 subjects, or 65%, followed the experimenter's orders and proceeded to the top of the shock scale. The subjects were not calm or happy about what they were doing. Many showed signs of stress and concern for the person they were shocking. They even became angry at the experimenter, yet they obeyed.

After the experiment, the subjects were told it was really a fake experiment, so they did not leave thinking they had hurt somebody. The subject was able to talk to the confederate so the subject could leave without psychological damage.

Discussion

Milgram's discussion focused on two main points. First, was the surprising strength of the subjects' tendency to obey. Normal people would follow the commands of an authority figure of no real power to the point of killing another.

Second, the subjects became very tense and anxious during the course of the experiment, yet they refused to quit. They continued amidst their personal angst.

Milgram listed several possible reasons why people will obey: 1) if it's sponsored by Yale, it must be in good hands 2) the goals of the study must be important, and I volunteered, so I should do my part 3) the learner was a volunteer, and he has an obligation to the project too 4) hey, we drew lots to get our position – I could have been the learner and then I would be the one being shocked 5) they are paying me, I better do this 6) I don't know much about the right of psychologists and subjects, so I better do this 7) they told us the shocks are painful, but not dangerous.

Significance of Findings

Milgram's findings have held up quite well in the last 30 years. Milgram repeated the experiment again, and found similar results.

There are other factors that affect conformity:

1) When the learner is outside of the room with the person administering the shock, obedience is higher. If the learner and the person administering the shock are in the same room, obedience decreases.
2) The closer the experimenter is to the subject, the higher the obedience. If the experimenter is out of the room, obedience drops.
3) When subjects are allowed to punish the learner by using any level of shock they wish, no one ever pressed a switch higher than 45 volts.

Criticisms

Milgram's experiment made the world of psychology look at ethics in psychology much more closely. What kind of psychological effects were left on the person who was administering the shocks? Critics claim that unacceptable levels of stress were created in the subjects during the experiment. Also, there was a chance for long lasting psychological effects. When the deception was revealed, the subjects felt embarrassed, used, and distrustful of psychologists and authority figures.

Another criticism was that this occurred in a lab setting, and the results might not apply to the real world.

Milgram responded to the criticisms by surveying subjects after they participated. Only 1% regretted the experience; 84% were glad to have participated. A psychiatrist interviewed 40 of the subjects who were very uncomfortable during the experiment, and concluded that none suffered any long-term effects.

Recent Application

Some studies done during 1992 and 1993 refer to the Milgram's study. One study referred to Milgram in an analysis of fan violence at sporting events (Simons and Taylor, 1992). Another study examined the uses of power within members of the clergy (Heinrichs, 1993). A recent article returned to Milgram's starting point: the Holocaust (Blass, 1993).